### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 22.08.95

Test oil

: ISO 4113

Combination No. : 0 402 746 909

Injection pump

Pump designation : PES6P120A320RS7236

EP type number : 0 412 726 848

Governor

Governer design. : RQV275...1000PA1001

: -1

Governer no.

: 0 421 813 936

Cust. part No. : CCEP 5116A PROJ.171

Customer-spec. information

Customer

: RVI

Motor

: MIDR 063540 J/3

Power KW

: 306.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: <del>←</del> 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 600 x Length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.50

: <del>+-</del> 0.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Barrel no. : 1

# CRT ZERO POSITION

Rack travel in mm: 13.80

Tolerance mm :  $\leftarrow$  0.05

BASIC SETTING

Rated speed rpm : 600

1	Tolerance
Del. quantity cm3/1000 strokes : 310.0	cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance +	cm3/1000s. : +- 4.0 Spreed
cm3/1000 strokes : + 1.0 + Check tolerance	Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : +- 4.0	cm3/1000s. : 9.0
Spreed	
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	control lever position degree : 302.0 tolerance degree : +- 4.0
Rated speed rpm : 300	RATED SPEED rack travel mm : -1.00 Rated speed rpm : 1070 Tolerance 1/min : +- 5
Rack travel in mm: -8.60  Tolerance mm: + 0.10  Del. quantity  cm3/1000 strokes: 31.0  Tolerance	rack travel mm : -9.70 Rated speed rpm : 1210 Tolerance 1/min : +- 15
cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance	rack travel mm : -13.25 Tolerance mm : + 0.55 Rated speed rpm : 1350
cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 246.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Testing:
control lever position degree : -1	Rated speed rpm : 300 rack travel mm : -8.60 Tolerance mm : + 0.10
Rated speed rpm : 1150	Rated speed rpm : 200
Rack travel in mm: 16.50 Tolerance mm: + 1.30	CRT mm max. : < -7.20
- Totel and e min	Rated speed rpm : 370
FULL LOAD DELIVERY AT FULL LOAD STOP	TORQUE CONTROL
Rated speed rpm : 600 Aneroid pressure	Rated speed rpm : 600
hPa : 1000 Del. quantity cm3/1000 strokes : 310.0	Rated speed rpm : 1000 Tolerance mm : +- 0.10

Rated speed rpm rack travel mm Tolerance mm	: 500 : -5.50 : +- 0.10	‡	rack travel mm Tolerance mm Del. quantity cm3/1000 strokes	: -5.50 : +- 0.10 : 138.0
ANEROID/ALTITUDE COMPENSATOR TEST			Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: +- 5.0 : +- 8.0
SETTING		Ţ	Spreed Tolerance cm3/1000 strokes	
Rated speed rpm Pressure hPa		<del>-</del>	Check tolerance cm3/1000s.	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm Tolerance mm	: -5.00 : +- 0.20 : 500 : 240 : -3.80	T + + + + + + + + + + + + + + + + + + +	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 152.0 : + 1.0
Pressure hPa rack travel mm Tolerance mm	: 600 : −0.95 : ← 0.05	† + + +	STARTING FUEL DEL Del. quantity cm3/1000 strokes	
Start interlock		<del> </del>	Tolerance cm3/1000 strokes Check tolerance	
Rated speed rpm Rated speed rpm Check		+ + +	cm3/1000S.	: +- 14.0
speed 1/min Check	: > 80	+	LOW IDLE	
speed 1/min	: < 245	‡	Rated speed rpm	: 300
FUEL DELIVERY CHA	RACTERISTICS	<u> </u>	Rack travel in mm Tolerance mm Del. quantity	
Aneroid pressure hPa	: 1000	<u> </u>	cm3/1000 strokes Tolerance	
Rated speed rpm Del. quantity	: 1000	1	cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000 strokes Tolerance	: 287.0	<u> </u>	cm3/1000s. Spreed	: +- 5.0
cm3/1000 strokes Check tolerance	: +- 3.0	<u> </u>	Tolerance cm3/1000 strokes	. 80
cm3/1000s.	: +- 6.0	$\frac{1}{1}$	Check tolerance cm3/1000s.	
Anonoid process		+		
Aneroid pressure hPa	:=	Ŧ		
Rated speed rpm	: 500	+		

Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 22.08.95 : ISO 4113

Combination No. : 0 402 746 931

Injection pump

Pump designation : PES6P120A320RS7236 EP type number : 0 412 726 848

Governor

Governer design. : RQV275...1000PA1001

: -2

Governer no.

: 0 421 813 989

Cust. part No. : CCEP5128A 66-194

Customer-spec. information

Customer

: RVI

Motor

: MIDR 063540 N/3

Power KW

: 283.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +-2.0

Overflow valve : 2 417 413 071

Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar

: +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : + 1.0

: 4.55 Prestroke mm

: +- 0.05 Tolerance mm

Check

tolerance mm : +- 0.10

Rack travel in mm : 19.50

Tolerance mm : +- 1.50

: 1-5-3-6-2-Firing order

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance

Check

: +- 0.50

tolerance °NW

: +- 0.75

Start of delivery mark

Barrel no.

CRT ZERO POSITION

Rack travel in mm : 13.35

Tolerance mm :  $\leftarrow$  0.05

BASIC SETTING

Rated speed rpm : 600	- Del. quantity - cm3/1000 strokes : 290.0
Del. quantity cm3/1000 strokes : 290.0	- Tolerance - cm3/1000 strokes : +- 2.0
Tolerance	- Check tolerance - cm3/1000S. : +- 5.0 - Spreed
Check tolerance - 5.0	Tolerance - cm3/1000 strokes : 8.0 - Check tolerance
Spreed	- cm3/1000s. : 12.0
Tolerance cm3/1000 strokes : 8.0	- CONTROL LEVER
Check tolerance cm3/1000s. : 12.0	- - control lever - position degree : 301.0 - tolerance degree : +- 4.0
Rated speed rpm : 300	- RATED SPEED - rack travel mm : -1.00 - Rated speed rpm : 1070
Rack travel in mm : -8.20 Tolerance mm : +- 0.10	- Tolerance 1/min : + 5 - rack travel mm : -9.30
Del. quantity cm3/1000 strokes : 31.0 Tolerance	- Rated speed rpm : 1205 - Tolerance 1/min : + 15
cm3/1000 strokes : +- 2.5 Check tolerance cm3/1000s. : +- 5.0	rack travel mm : -12.85 Tolerance mm : +- 0.55
Spreed Tolerance cm3/1000 strokes : 6.0	- Rated speed rpm : 1350 - -
Check tolerance cm3/1000S. : 10.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 247.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	- Testing:
control lever position degree : -1 Rated speed rpm : 1190	Rated speed rpm : 300 rack travel mm : -8.20 Tolerance mm : + 0.10
Rack travel in mm: 13.20	Rated speed rpm : 200
Tolerance mm : +- 1.30	- CRT mm max. : < -6.80 - Rated speed rpm : 365
FULL LOAD DELIVERY AT FULL LOAD STOP	nateu speeu (pii) . 303
Rated speed rpm : 600 Aneroid pressure hPa : 1000	TORQUE CONTROL Rated speed rpm : 600
1,1000	Rated speed rpm : 1000

Tolerance mm	: +- 0.10	+ Aneroid pressure
5 1 1 2 1	. (00	+ hPa : - Rated speed rpm : 600
Rated speed rpm	: 000	
rack travel mm Tolerance mm	: -4.50	+ rack travel mm : -4.50 + Tolerance mm : + 0.10
Tolerance mm	: +- 0.10	
		+ Del. quantity
ANEROID/ALTITUDE		+ Tolerance
COMPENSATOR TEST		+ cm3/1000 strokes : +- 5.0
		+ Check tolerance
		+  cm3/1000s. : + 8.0
SETTING		Spreed
36111140		Tolerance
Dated aread pro	: 500	cm3/1000 strokes : 8.0
Rated speed rpm		
Pressure hPa	: 1000	Check tolerance
		+ cm3/1000s. : 12.0
Rated speed rpm	: 500	+
Pressure hPa	: -	
rack travel mm	: -3.80	+ Aneroid pressure
Tolerance mm		+ hPa : -
		Rated speed rpm : 500
MEASUREMENT		+ Del. quantity
LICKSOKELIEIA)		+ cm3/1000 strokes : 167.0
D-1-1	. 500	
Rated speed rpm	: 500	+ Tolerance
		+ cm3/1000 strokes : +- 1.0
Pressure hPa		+ Check tolerance
rack travel mm		+ cm3/1000s. : +- 4.0
Tolerance mm	: +- 0.20	+
		1
Pressure hPa	: 480	
rack travel mm	-0.75	STARTING FUEL DELIVERY
Tolerance mm		
roter drice limit	6.65	Del. quantity
		+ cm3/1000 strokes : 160.0
Start interlock		+ Tolerance
		+ cm3/1000 strokes : +- 10.0
Rated speed rpm	: > 100	+ Check tolerance
Rated speed rpm	: < 195	+ cm3/1000s. : +- 14.0
·		+
Check		1
speed 1/min	: > 80	1
Check	. > 00	
	315	T 101 70 F
speed 1/min	: < 215	+ LOW IDLE
		700
FUEL DELIVERY CHA	RACTERISTICS	†
		+Rack travel in mm :−8.20
		+ Tolerance mm : $+$ 0.10
Aneroid pressure		→ Del. quantity
hPa	: 1000	+ cm3/1000 strokes : 31.0
Rated speed rpm		+ Tolerance
Del. quantity		+ cm3/1000 strokes : +- 2.5
cm3/1000 strokes	: 270.0	Check tolerance
	. 210.0	+ cm3/1000s. : +- 5.0
Tolerance		
cm3/1000 strokes	: +- 4.0	+ Spreed
Check tolerance		+ Tolerance
cm3/1000S.	: <del>+-</del> 7.0	+ cm3/1000 strokes : 6.0
		+ Check tolerance
		+ cm3/1000s. : 10.0
		1 10.0
		+

End of test specification sheet

80A

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.08.95 : ISO 4113 Test oil

Combination No. : 0 400 866 169

Injection pump

Pump designation : PES6A85D41C/3RS2611

EP type number : 0 410 886 902

Governor

Governer design. : RSV325...1250A2C540

: -3L

Governer no. : 0 420 232 565

Cust. part No. :

Customer-spec. information

: KHD Customer : F6L913

Motor : 89.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. "C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.55 : +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : + 1.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.55 : +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes: 63.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s. : +<del>-</del> 2.5

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance	
cm3/1000s. : 5.0	CONTROL LEVER
Ť	control lever
Rated speed rpm : 325	position degree : 102.0
Rack travel in mm: 7.00	tolerance degree : +- 4.0
Tolerance mm : + 0.10	RATED SPEED
Del. quantity	rack travel mm : 9.50
cm3/1000 strokes : 15.0 +	Rated speed rpm : 1295
Tolerance	Tolerance 1/min : ← 5
cm3/1000 strokes : + 3.0 +	
Check tolerance +	rack travel mm : 4.00
cm3/1000s. : +- 5.0 +	Rated speed rpm : 1365
Spreed	Tolerance 1/min : +- 15
Tolerance +	made Amount was a COP
cm3/1000 strokes : 2.5	rack travel mm : 0.85
Check tolerance + cm3/1000s. : 4.5	Tolerance mm : +- 0.55 Rated speed rpm : 1525
cm3/1000s. : 4.5	Rated speed rpm : 1525
Į	
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	
†	LOW IDLE
I	
GUIDE SLEEVE POSITION	control lever
+	position degree : 74.0
+	tolerance degree : +- 4.0
control lever	
position degree : -3 +	Setting point w/out bumper spring
Rated speed rpm : 800 +	0.1.1
Rack travel in mm : 0.50	Rated speed rpm : 100
Tolerance mm : + 0.20	CRT mm min. : > 19.50
Toter ance min	CI(1 mail mail)
governor spring +	Testing:
pre-tension +	•
click setting $x$ : 5.50	Rated speed rpm : 325
+	rack travel mm : 7.00
+	Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP +	2.22
Detect aread area 1350	rack travel mm : 2.00
Rated speed rpm : 1250	Rated speed rpm : 440 Tolerance 1/min : +- 30
Aneroid pressure	Toterance T/min : +- 30
Del. quantity	SET IDLE AUXILIARY SPRING
cm3/1000 strokes : 63.0	SET THE MONTETART SPRING
Tolerance +	Rated speed rpm : 100
cm3/1000 strokes : + 0.5	
Check tolerance	
cm3/1000s. : +- 2.5	FORQUE CONTROL
Spreed	Rated speed rpm : 1250
Tolerance	rack travel mm : 10.55
cm3/1000 strokes : 3.0 +	Tolerance mm : + 0.05
Check tolerance	Dated and and 500
cm3/1000S. : 5.0	Rated speed rpm : 500
†	rack travel mm : 11.15 Tolerance mm : + 0.05
†	rocerance in . F- U.U.

Rated speed rpm : 1000 rack travel mm : 10.80 Tolerance mm : + 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa 800 Rated speed rpm Del. quantity cm3/1000 strokes : 55.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.5 Spreed Tolerance cm3/1000 strokes : 2.5

4.5

# STARTING FUEL DELIVERY

Check tolerance

cm3/1000s.

Rated speed rpm : 100
rack travel mm : 17.80
Tolerance mm : + 0.20
Del. quantity
cm3/1000 strokes : 120.0
Tolerance
cm3/1000 strokes : + 5.0
Check tolerance
cm3/1000s. : + 8.0

LOW IDLE

Rated speed rpm : 325 Rack travel in mm : 7.00 : **←** 0.10 Tolerance mm Del. quantity cm3/1000 strokes : 15.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance

cm3/1000 strokes : 2.5
Check tolerance
cm3/1000s. : 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 12.05.95 Test oil : ISO 4113

Combination No. : 9 400 030 696

Injection pump

Pump designation : PES6A95D32ORS2881 EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1250A0C826R

Governer no. : 9 420 034 700

Cust. part No. :

Customer—spec. information Customer : CUMMINS

Motor : 6BT - 165 PS

# TEST BENCH REQUIREMENTS

Inlet line : 1.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 207.0Tolerance bar : + 3.0

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300 Tolerance : + 0.50

Check

tolerance °NW : + 0.75

# Start of delivery blocking

°NW after s.o.d. : 7.00 Tolerance : + 0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 12.15
Tolerance mm : + 0.05

+	Setting point w/out bumper spring
Rated speed rpm : 475	Rated speed rpm : 100
Rack travel in mm : 5.10 Tolerance mm : + 0.10	CRT mm min. : > 19.50
Del. quantity cm3/1000 strokes : 16.0	Testing:
cm3/1000 strokes : + 2.0 + Check tolerance	Rated speed rpm : 475 rack travel mm : 5.10 Tolerance mm : + 0.10
cm3/1000s. : + 4.5 Spreed	
Tolerance + cm3/1000 strokes : 3.5 + Check tolerance + cm3/1000 strokes : 3.5 + cm3/1000 strokes	rack travel mm : 2.00 Rated speed rpm : 540 Tolerance 1/min : +- 30
cm3/1000s. : 5.5	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	TORQUE CONTROL Rated speed rpm : 1250 rack travel mm : 12.15 Tolerance mm : +- 0.05
GUIDE SLEEVE POSITION	Rated speed rpm : 500 rack travel mm : 12.15 Tolerance mm : + 0.10
governor spring pre-tension click setting x : 2.50	Rated speed rpm : 800 rack travel mm : 12.15 Tolerance mm : + 0.05
CONTROL LEVER	ANEROID/ALTITUDE COMPENSATOR TEST
control lever position degree : 54.5 tolerance degree : + 4.0	SETTING
RATED SPEED rack travel mm : 11.10 Rated speed rpm : 1300 Tolerance 1/min : +- 5	Rated speed rpm : 800 Pressure hPa : 1000 rack travel mm : 12.15 Tolerance mm : + 0.05
rack travel mm : 4.00 Rated speed rpm : 1395 Tolerance 1/min : +- 15	Rated speed rpm : 500 Pressure hPa : 505 rack travel mm : 11.10 Tolerance mm : + 0.10
rack travel mm : 1.20 + Tolerance mm : + 0.50 + Rated speed rpm : 1450 +	MEASUREMENT
Rated speed rpm : 1450	Rated speed rpm : 800
LOW IDLE	Pressure hPa : - rack travel mm : 8.55 Tolerance mm : + 0.05
control lever position degree : 27.5 tolerance degree : + 4.0	FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 65.0

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 4.0

Aneroid pressure

hPa : 1000
Rated speed rpm : 800
rack travel mm : 12.15
Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 114.0

Tolerance

cm3/1000 strokes : +- 1.5

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.25 Tolerance mm : +- 0.75

Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : +- 7.0

Check tolerance

cm3/1000S. : +- 10.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.10 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 3.5

Check tolerance

cm3/1000s. : 5.5

\_\_\_\_\_

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

**Edition** Test oil : 23.10.95 : ISO 4113

Combination No. : 0 403 246 051

Injection pump

Pump designation : PES6MW100/720RS1526

EP type number : 0 413 206 025

Governor

Governer design: : RQV300...1200MW132

: -18

Governer no.

: 0 420 083 337

Cust. part No. : 0260748602

Customer-spec. information

Customer : MB-NFZ

Motor

: 0M366LA

Power KW

: 125.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

Prestroke mm

: 4.55

: +- 0.05 Tolerance mm

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.00

Tolerance mm : +- 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm: 11.90

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 98.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance cm3/1000 strokes	: 4.5	control lever position degre
Check tolerance cm3/1000s.	: 7.0	Rated speed rp
		Rack travel in Tolerance mm
Rated speed rpm	: 300	FULL LOAD DELI
Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: + 0.10 : 12.0 : + 2.0 : + 4.5 : 2.0 : 4.0	Rated speed rp Aneroid pressu hPa Del. quantity cm3/1000 strok Tolerance cm3/1000s. Spreed Tolerance cm3/1000 strok Check tolerance cm3/1000s.
GUIDE SLEEVE TRAVE		CONTROL LEVER
Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm  Rated speed rpm guide sleeve travel mm Tolerance mm	: 1253 : 7.33 : + 0.15 : 300 : 1.01 : + 0.20 : 811 : 4.16 : + 0.25 : 560	control lever position degree  RATED SPEED rack travel mm Rated speed rpi Tolerance 1/min  rack travel mm Rated speed rpi Tolerance 1/min  rack travel mm Rated speed rpi Rated speed rpi
travel mm Tolerance mm	: 3.08 : +- 0.25	LOW IDLE
Rated speed rpm guide sleeve travel mm Tolerance mm	: 1750 : 13.50 : +- 0.50	control lever position degree
GUIDE SLEEVE POSIT	ION	Rated speed rpm
		CPT mm min

+	control Lever
+	position degree : 125
+	Rated speed rpm : 1375
+	
1	Rack travel in mm: 10.00
+	Tolerance mm : +- 2.70
1	
1	
1	FULL LOAD DELIVERY AT FULL LOAD STOP
T	TOLL LOAD DELIVERY AT FOLL LOAD STOP
T	Dated aread non . 1200
Ť	Rated speed rpm : 1200
†	Aneroid pressure
+	hPa : 1000
+	Del. quantity
+	cm3/1000 strokes : 98.0
+	Tolerance
+	cm3/1000 strokes : + 1.0
+	Check tolerance
+	cm3/1000s. : +- 3.0
1	Spreed
1	Tolerance
$\perp$	cm3/1000 strokes : 4.5
T	Check tolerance
<del></del>	cm3/1000s. : 7.0
T	CIII37 (UUU3. : 7.U
+	
+	
+	
+	CONTROL LEVER
+	
+	control lever
+	position degree : 120.0
+	
+	RATED SPEED
+	rack travel mm : 10.90
+	Rated speed rpm : 1245
1	Tolerance 1/min : + 5
1	
1	rack travel mm : 4.00
1	Rated speed rpm : 1390
T	·
Ť	Tolerance 1/min : +- 15
Ť	0.50
+	rack travel mm : 0.50
+	Tolerance mm : ← 0.50
+	Rated speed rpm : 1500
+	
+	
+	
+	
+	LOW IDLE
+	
+	
1	control lever
1	position degree : 73.0
1	poot ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (
1	Setting point w/out bumper spring
1	occoming points would bumper spring
Ι	Rated speed rpm : 200
Ι	nated speed thin . son
T	CRT mm min. : > 4.50
+	CRT mm min. : > 4.50

# Testing:

Rated speed rpm	:	<b>3</b> 00
rack travel mm	:	4.00
Tolerance mm	: +	- 0.10

TOR	QUE	CONTROL

Rated speed rpm : 1200 rack travel mm : 11.90 : +- 0.05 Tolerance mm

Rated speed rpm 750 rack travel mm 11.90 Tolerance mm : +- 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

# CRT ZERO POSITION

Rack travel in mm: 9.70 Tolerance mm : ← 0.10

Rated speed rpm : 500 : 1000 Pressure hPa : 11.90 rack travel mm : + - 0.10Tolerance mm

Rated speed rpm : 500 Pressure hPa : + 0.10Tolerance mm

# **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa 350 rack travel mm 1.30 Tolerance mm : +- 0.10

: 250 Pressure hPa rack travel mm 0.65 : : + - 0.10Tolerance mm

# Start interlock

100 Rated speed rpm : > Rated speed rpm 220 : <

Check

speed 1/min : > 80

Check

speed 1/min : < 240

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:	1	000
Rated speed rpm	:		750
Del. quantity			
cm3/1000 strokes	:		96.0
Tolerance			
cm3/1000 strokes	:	+-	1.5
Check tolerance			
cm3/1000s.	:	+	4.0
Spreed			
Tolerance			
cm3/1000 strokes	:		6.0
Check tolerance			
cm3/1000s.	:		9.0

Aneroid pressure

Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 61.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. 3.0 : +-

# STARTING FUEL DELIVERY

Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 125.0 Tolerance cm3/1000 strokes : +-5.0

Check tolerance

: +- 8.0 cm3/1000s.

# LOW IDLE

Rated speed rpm : 300 Rack travel in mm : 4.00 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 12.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance : +- 4.5 cm3/1000s. Spreed

Tolerance

cm3/1000 strokes : 2.0 Check tolerance cm3/1000s. : 4.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 18.04.96 Test oil : ISO 4113

Combination No. : 0 402 746 953

Injection pump

Pump designation : PES6P120A320RS7294 EP type number : 0 412 726 895

Governor

Governer design. : RQV275...1000PA1001

: -1

Governer no. : 0 421 813 936

Cust. part No. : CCEP-5135 66-213

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 063540 J/3

Power KW : 306.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 4.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.70

Barrel no. : 1

# CRT ZERO POSITION

Rack travel in mm : 13.70 Tolerance mm : + 0.05

	+ guide sleeve
BASIC SETTING	Tolerance mm : +- 0.20
Rated speed rpm : 600	Rated speed rpm : 343
No. 1	guide sleeve
Del. quantity cm3/1000 strokes : 309.0	+ travel mm : 2.33 + Tolerance mm : + 0.20
Tolopana	Rated speed rpm : 393
Tolerance cm3/1000 strokes : + 1.0	+ Rated speed rpm : 393 + guide sleeve
CIIDA 1000 STROKES . TO	travel mm : 2.99
Check tolerance	Tolerance mm : +- 0.20
cm3/1000s. : +- 4.0	
CIII37 10003 4.0	Rated speed rpm : 490
Spreed	guide sleeve
opi eca	travel mm : 3.81
Tolerance	+ Tolerance mm : +- 0.20
cm3/1000 strokes : 5.0	
Silly 1000 Strokes . Sill	Rated speed rpm : 1370
Check tolerance	guide sleeve
cm3/1000s. : 9.0	+ travel mm : 11.50
(IIIS) 10003 , , . , . , . , . , .	+ Tolerance mm : + 0.50
	+ vocet arree man
Rated speed rpm : 300	GUIDE SLEEVE POSITION
Rated speed Ipin . 300	+ GOIDE SEEEVE POSITION
Rack travel in mm : -8.60	<del>}</del>
Tolerance mm : + 0.10	+ control lever
Del. quantity	<pre>position degree : - 1</pre>
cm3/1000 strokes : 30.0	+ Rated speed rpm : 1185
Tolerance	+
cm3/1000 strokes : +- 2.0	+ Rack travel in mm : 12.60
Check tolerance	+ Tolerance mm : +- 1.30
cm3/1000s. : +- 6.0	+
Spreed	
Tolerance	+ FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 8.0	+
Check tolerance	+ Rated speed rpm : 600
cm3/1000s. : 12.0	+ Aneroid pressure
	+ hPa : 1000
	Del. quantity
(B) SETTING OF INJECTION PUMP	+ cm3/1000 strokes : 309.0
WITH GOVERNOR	+ Tolerance
	+ cm3/1000 strokes : + 1.0
GUIDE SLEEVE TRAVEL	+ cm3/1000s. : +- 4.0
	+ Spreed
Rated speed rpm : 1086	+ Tolerance
guide sleeve	+ cm3/1000 strokes : 5.0
travel mm : 8.46	+ Check tolerance
Tolerance mm : + 0.10	+ cm3/1000s. : 9.0
	+
Rated speed rpm : 275	+
guide sleeve	+
travel mm : 1.29	+ CONTROL LEVER
Tolerance mm : + 0.10	+
	control lever
Rated speed rpm : 773	position degree : 302.0
•	tolerance degree : +- 4.0

		+ Tolerance mm : +- 0.20
RATED SPEED rack travel mm		MEASUREMENT
Rated speed rpm Tolerance 1/min		Rated speed rpm : 500
rack travel mm Rated speed rpm Tolerance 1/min	: 1220	Pressure hPa : 240 rack travel mm : -3.70 Tolerance mm : +- 0.20
rack travel mm Tolerance mm Rated speed rpm	: <del>+-</del> 0.55	Pressure hPa : 600 rack travel mm : -0.85 Tolerance mm : +- 0.05
		Start interlock
LOW IDLE		Rated speed rpm : > 100 Rated speed rpm : < 225
control lever position degree tolerance degree	: 246.0 : + 4.0	Check speed 1/min : > 80 Check speed 1/min : < 245
Testing:		
Rated speed rpm rack travel mm Tolerance mm	: -8.60	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 200	+ Aneroid pressure + hPa : 1000 + Rated speed rpm : 1000
CRT mm max.	: < -7.20	+ Del. quantity + cm3/1000 strokes : 286.0
Rated speed rpm	: 370	Tolerance + cm3/1000 strokes : + 3.0
TORQUE CONTROL Rated speed rpm	: 600	Check tolerance cm3/1000s. : + 6.0
Rated speed rpm Tolerance mm		Aneroid pressure hPa : 1000 Rated speed rpm : 500
Rated speed rpm rack travel mm Tolerance mm	: 500 : −5.50 : ← 0.10	rack travel mm : -5.50 Tolerance mm : +- 0.10 Del. quantity
ANEDOTO (AL TITLIDE		cm3/1000 strokes : 137.0 Tolerance cm3/1000 strokes : +- 5.0
ANEROID/ALTITUDE COMPENSATOR TEST		+ Check tolerance + cm3/1000s. : + 8.0
SETTING		+ Spreed + Tolerance + cm3/1000 strokes : 8.0
Rated speed rpm Pressure hPa	: 500 : 1000	Check tolerance cm3/1000s. : 12.0
Rated speed rpm Pressure hPa rack travel mm	: 500 : - : -4.90	Aneroid pressure hPa : -

500 Rated speed rpm :

Del. quantity cm3/1000 strokes :

152.0

Tolerance

cm3/1000 strokes : +-

1.0

Check tolerance

cm3/1000s. 4.0

# STARTING FUEL DELIVERY

Del. quantity

cm3/1000 strokes : 160.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : + 14.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm: -8.60

: +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. : +-6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

12.0 cm3/1000s. :

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 28.10.94 Edition : ISO 4113 Test oil

Combination No. : 0 402 036 744

Injection pump

Pump designation : PES6P120A720/3LS3255

EP type number : 0 412 026 739

Governor

Governer design. : RQV300...1000PA876

: -12

: 0 421 813 897 Governer no.

Cust. part No. : 3-7039

Customer-spec. information Customer : MAN

: D2866LF05 Motor

Power KW : 272.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 Tolerance bar

: +- 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.75
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 15.00

Tolerance mm : + 1.50

Firing order : 6-2-4-1-5-

: 0-60-120-180-240 Phasing

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm: 15.15 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 245.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0	Tolerance 1/min : +- 15 rack travel mm : 0.50
Spreed	Tolerance mm : +- 0.50  Rated speed rpm : 1300
Tolerance cm3/1000 strokes : 8.0	Nated Speed I pill 1 1300
Check tolerance cm3/1000s. : 12.0	LOW IDLE
Rated speed rpm : 300	control lever position degree : 258.0 tolerance degree : +- 4.0
Rack travel in mm: 5.00 Tolerance mm: + 0.10	Setting point w/out bumper spring
Del. quantity cm3/1000 strokes : 20.0	Rated speed rpm : 200
cm3/1000 strokes : + 3.0 + Check tolerance	CRT mm min. : > 6.50
cm3/1000s. : + 6.0 + 5preed	Testing:
Tolerance cm3/1000 strokes : 8.0 Check tolerance	Rated speed rpm : 300 rack travel mm : 5.00 Tolerance mm : +- 0.10
cm3/1000s. : 12.0 +	Rated speed rpm : 340
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 15.15
GUIDE SLEEVE POSITION	Tolerance mm : + 0.05
control lever + position degree : -1 +	Rated speed rpm : 1000 rack travel mm : 15.15 Tolerance mm : + 0.05
Rated speed rpm : 1100  Rack travel in mm : 16.50 Tolerance mm : + 1.30	Rated speed rpm : 700 rack travel mm : 8.00 Tolerance mm : +- 0.10
<del>†</del>	ANEROID/ALTITUDE
CONTROL LEVER	COMPENSATOR TEST
control lever position degree : 302.0 tolerance degree : + 4.0	SETTING Rated speed rpm : 500
RATED SPEED rack travel mm : 14.10 Rated speed rpm : 1045	Pressure hPa : 1200 rack travel mm : 15.15 Tolerance mm : +- 0.05
Tolerance 1/min : + 5  rack travel mm : 4.00	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 12.10
Rated speed rpm : 1165	Tolerance mm : + 0.10

# **MEASUREMENT**

Rated speed rpm : 500 470 Pressure hPa

14.20 rack travel mm : +- 0.20 Tolerance mm

Pressure hPa 110 rack travel mm 12.35 : +- 0.05 Tolerance mm

Start interlock

100 Rated speed rpm : > Rated speed rpm : < 220

Check

speed 1/min : > 80 Check

speed 1/min : < 240

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa 1200 Rated speed rpm : 1000

Del. quantity

cm3/1000 strokes : 245.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

: +- 5.0 cm3/1000s.

Aneroid pressure

700 Rated speed rpm : rack travel mm : 8.00 : +- 0.10 Tolerance mm Del. quantity

cm3/1000 strokes : 94.0

Tolerance

cm3/1000 strokes : +-5.0 Check tolerance

cm3/1000s.

: +--8.0

Spreed Tolerance

cm3/1000 strokes : 10.0

Aneroid pressure

Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 139.0

Tolerance

cm3/1000 strokes : +-1.0

Check tolerance

cm3/1000s. : +--4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 220.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. : +- 14.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 5.00 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 20.0 Tolerance

cm3/1000 strokes : +-3.0

Check tolerance cm3/1000s. : +-6.0

Spreed Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0 :

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Test oil : 29.11.96

Combination No. : 0 402 746 894

Injection pump

Pump designation : PES6P110A320RS7208 EP type number : 0 412 716 803

Governor Governer design. : RQV275...1175PA942

: -1K

: 0 421 815 244 Governer no.

Cust. part No. : CCEP 5100A

Customer-spec. information

Customer : RENAULT V.I. Motor : MIDRO60226 M

: 210.0 Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance bar : + 0.1

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

RFMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Prestroke mm : 4.15 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 13.50 Tolerance mm :  $\leftarrow$  0.50

: 1-5-3-6-2-Firing order

: 4

: 0-60-120-180-240 Phasing

: -300

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

CRT ZERO POSITION

Rack travel in mm : 14.05

Tolerance mm : + 0.05

	+ guide sleeve
BASIC SETTING	travel mm : 6.57 Tolerance mm : +- 0.25
	+
Rated speed rpm : 1175	+ Rated speed rpm : 390 + guide sleeve
Del. quantity	+ travel mm : 2.39
cm3/1000 strokes : 171.0	+ Tolerance mm : +- 0.25
Tolerance	Rated speed rpm : 440
cm3/1000 strokes : +- 1.0	+ guide sleeve + travel mm : 3.01
Check tolerance	Tolerance mm : +- 0.25
cm3/1000s. : $\leftarrow$ 3.5	
Spreed	guide sleeve
Talanana	+ travel mm : 3.92
Tolerance cm3/1000 strokes : 4.0	Tolerance mm : +- 0.25
	Rated speed rpm : 1650
Check tolerance cm3/1000s. : 7.5	+ guide sleeve + travel mm : 13.50
cm3/1000s. : 7.5	Tolerance mm : +- 0.50
Rated speed rpm : 275	GUIDE SLEEVE POSITION
Rack travel in mm : -8.80	<del>-</del>
Tolerance mm : + 0.20	+ control lever
Del. quantity cm3/1000 strokes : 21.0	position degree : - 1
Tolerance	+ Rated speed rpm : 1400
cm3/1000 strokes : + 2.5	Rack travel in mm: 13.00
Check tolerance	† Tolerance mm : +- 1.30
cm3/1000s. : + 5.0 Spreed	I
Tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000 strokes : 4.5	+
Check tolerance cm3/1000s. : 7.5	+ Rated speed rpm : 1175
CIID/ 1000s 7.3	+ Aneroid pressure + hPa : 1000
	Del. quantity
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	cm3/1000 strokes : 171.0 Tolerance
WITH GOVERNOR	cm3/1000 strokes : +- 1.0
GUIDE SLEEVE TRAVEL	- cm3/1000s. : +- 3.5 - Spreed
Rated speed rpm : 1256	Tolerance
guide sleeve	- cm3/1000 strokes : 4.0
travel mm : 9.17 Tolerance mm : + 0.25	+ Check tolerance + cm3/1000S. : 7.5
	+ (115) 10003.
Rated speed rpm : 275	†
guide sleeve travel mm : 1.00	CONTROL LEVER
Tolerance mm : + 0.25	+
Dated smood : 990	+ control lever
Rated speed rpm : 888	position degree : 114.0 tolerance degree : +- 4.0
	T Cotol and deglies T.O

		+ Pressure hPa	: 1000
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 1245	Rated speed rp Pressure hPa rack travel mm Tolerance mm	m : 1175 : - : -3.30
rack travel mm Rated speed rpm Tolerance 1/min	: 1430	MEASUREMENT	. 0.23
rack travel mm		Rated speed rp	m : 1175
Tolerance mm Rated speed rpm	: +- 0.55	Pressure hPa rack travel mm Tolerance mm	: -2.70
		Pressure hPa	
LOW IDLE		rack travel mm Tolerance mm	: -1.45 : +- 0.05
control lever position degree		Start interloc	
tolerance degree Testing:	: +- 4.0	+ Rated speed rp + Rated speed rp	
Rated speed rpm	: 275	+ Check + speed 1/min	: > 130
rack travel mm Tolerance mm	: <del>-</del> 8.80	Check speed 1/min	
Rated speed rpm	: 200	<u> </u>	
		+ FUEL DELIVERY	CHARACTERISTICS
CRT mm max.	: < -8.20		
CRT mm max. Rated speed rpm		Aneroid pressu hPa Rated speed ro	: 1000
Rated speed rpm TORQUE CONTROL	: 415	<ul><li>hPa</li><li>Rated speed rp</li><li>Del. quantity</li></ul>	: 1000 n : 700
Rated speed rpm TORQUE CONTROL Rated speed rpm	: 415 : 1175	<ul> <li>hPa</li> <li>Rated speed rpi</li> <li>Del. quantity</li> <li>cm3/1000 strok</li> <li>Tolerance</li> </ul>	: 1000 m : 700 es : 151.0
Rated speed rpm TORQUE CONTROL Rated speed rpm Rated speed rpm rack travel mm	: 415 : 1175 : 700 : -0.70	hPa Rated speed rpi Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance	: 1000 m : 700 es : 151.0 es : +- 3.0
Rated speed rpm TORQUE CONTROL Rated speed rpm Rated speed rpm rack travel mm Tolerance mm	: 415 : 1175 : 700 : -0.70 : + 0.10	<ul> <li>hPa</li> <li>Rated speed rpi</li> <li>Del. quantity</li> <li>cm3/1000 strok</li> <li>Tolerance</li> <li>cm3/1000 strok</li> </ul>	: 1000 700 es : 151.0
Rated speed rpm TORQUE CONTROL Rated speed rpm Rated speed rpm rack travel mm	: 415  : 1175  : 700 : -0.70 : + 0.10 : 700	hPa Rated speed rpi Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s.  Aneroid pressue hPa	: 1000 m : 700 es : 151.0 es : +- 3.0 e : +- 6.0
Rated speed rpm  TORQUE CONTROL Rated speed rpm  Rated speed rpm  rack travel mm  Tolerance mm  Rated speed rpm  rack travel mm  Tolerance mm  Rated speed rpm  Rated speed rpm  Rated speed rpm	: 415  : 1175  : 700 : -0.70 : + 0.10  : 700 : -6.05 : + 0.10  : 800	hPa Rated speed rpi Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s.  Aneroid pressue hPa Rated speed rpi rack travel mm	: 1000 m : 700 es : 151.0 es : +- 3.0 e : +- 6.0 re : 6.0 m : 700 : -6.05
Rated speed rpm  TORQUE CONTROL Rated speed rpm  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 415  : 1175  : 700 : -0.70 : + 0.10  : 700 : -6.05 : + 0.10  : 800	hPa Rated speed rpi Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s.  Aneroid pressue hPa Rated speed rpi	: 1000 m : 700 es : 151.0 es : + 3.0 e : + 6.0 re : - 6.0 re : - 6.05 : + 0.10
Rated speed rpm  TORQUE CONTROL Rated speed rpm Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 415  : 1175  : 700 : -0.70 : + 0.10  : 700 : -6.05 : + 0.10  : 800 : -0.35	hPa Rated speed rpi Del. quantity cm3/1000 strok Tolerance cm3/1000 strok Check tolerance cm3/1000s.  Aneroid pressui hPa Rated speed rpi rack travel mm Tolerance mm Del. quantity	: 1000 700 es : 151.0 es : + 3.0 e : + 6.0 re : - 6.05 : + 0.10 es : 55.0
Rated speed rpm  TORQUE CONTROL Rated speed rpm  Rated speed rpm  Tolerance mm  Rated speed rpm  rack travel mm  Tolerance mm  Rated speed rpm  rack travel mm  Tolerance mm	: 415  : 1175  : 700 : -0.70 : + 0.10  : 700 : -6.05 : + 0.10  : 800 : -0.35	hPa Rated speed rpi Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s.  Aneroid pressue hPa Rated speed rpi rack travel mm Tolerance mm Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s.	: 1000 700 es : 151.0 es : + 3.0 e : + 6.0 re : - 6.05 : + 0.10 es : 55.0 es : + 5.0
Rated speed rpm  TORQUE CONTROL Rated speed rpm Rated speed rpm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 415  : 1175  : 700 : -0.70 : + 0.10  : 700 : -6.05 : + 0.10  : 800 : -0.35	hPa Rated speed rpi Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance cm3/1000s.  Aneroid pressue hPa Rated speed rpi rack travel mm Tolerance mm Del. quantity cm3/1000 stroke Tolerance cm3/1000 stroke Check tolerance	: 1000 700 es : 151.0 es : + 3.0 e : + 6.0  re : - 6.05 : + 0.10 es : 55.0 es : + 5.0 e : + 8.0

Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity cm3/1000 strokes : 75.0

Tolerance

1.0 cm3/1000 strokes : +-

Check tolerance

cm3/1000s. 3.5

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 275

Rack travel in mm : -8.80Tolerance mm : +- 0.20

Del. quantity

21.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : + 2.5

Check tolerance

5.0 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 4.5

Check tolerance

cm3/1000s. 7.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 04.03.97 : ISO 4113

Combination No. : 0 402 746 957

Injection pump

Pump designation : PES6P120A720RS7292

: -1 EP type number : 0 412 726 939

Governor

Governer design. : RQV350...115UPA1074

: -2K

Governer no. : 0 421 815 367

Cust. part No. : 0250741002

40

Customer-spec. information Customer : MB-NFZ : 0M366LA Motor

Power KW

: 157.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 100
Tolerance l/h : +- 20.0

Test nozzle holde assembly : 1 688 901 105

Opening pressure

: 208.5 bar

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300 Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

"NW after s.o.d. : 3.30 Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

B02

Rated speed rpm	: 1150	‡	guide sleeve travel mm : 5.56 Tolerance mm : +- 0.25
Rack travel in mm Tolerance mm	: 14.10 : +- 0.05	+	Rated speed rpm : 550 guide sleeve travel mm : 3.17
Del. quantity cm3/1000 strokes	: 269.0	+	Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	: +- 1.0	<u> </u>	Rated speed rpm : 1480 guide sleeve travel mm : 13.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000S.	: +- 4.0	Ī	GUIDE SLEEVE POSITION
Spreed		Ŧ	GOIDE SEELVE 703111014
Tolerance cm3/1000 strokes	: 8.0	† † † † †	control lever position degree : - 1 Rated speed rpm : 1331
Check tolerance cm3/1000s.	: 12.0	+ + + +	Rack travel in mm : 13.50 Tolerance mm : +- 1.30
Rated speed rpm	: 350	+++++++++++++++++++++++++++++++++++++++	FULL LOAD DELIVERY AT FULL LOAD STOP
	: 6.00 : +- 0.10	+	Rated speed rpm : 1150 Aneroid pressure hPa : 1500
Del. quantity cm3/1000 strokes	: 13.0	Ŧ	Del. quantity
Tolerance cm3/1000 strokes	: +- 3.0	+	cm3/1000 strokes : 269.0 Tolerance
	: +- 6.0	‡	cm3/1000 strokes : +- 1.0 Check tolerance
Spreed Tolerance		‡	cm3/1000s. : +- 4.0 Spreed
cm3/1000 strokes : Check tolerance		‡	Tolerance cm3/1000 strokes : 8.0
cm3/1000s. :	: 8.0	+	Check tolerance cm3/1000s. : 12.0
(B) SETTING OF INJE	ECTION PUMP	+	
		‡	CONTROL LEVER
GUIDE SLEEVE TRAVEL	_	1	control lever position degree : 109.0
Rated speed rpm : guide sleeve	: 1206	+	tolerance degree : +- 4.0
travel mm :	9.35 +- 0.15	1	RATED SPEED rack travel mm : 13.40
Rated speed rpm :	350	+	Rated speed rpm : 1195 Tolerance 1/min : +- 5
guide sleeve travel mm       : Tolerance mm     :	1.53 + 0.20	‡	rack travel mm : 4.00 Rated speed rpm : 1325
Rated speed rpm :		‡	Tolerance 1/min : ← 15

rack travel mm Tolerance mm Rated speed rpm	: 0.70 : ← 0.70 : 1400
LOW IDLE	
control lever position degree tolerance degree	: 65.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 250
CRT mm min.	: > 6.90
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 6.00 : +- 0.10
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1150 : 14.10 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 13.95 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.40 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1150 : 1500 : 14.10 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1150 : − : 10.10 : ← 0.15
MEASUREMENT	

Rated speed rpm	: 1150
Pressure hPa rack travel mm Tolerance mm	: 400 : 10.90 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 850 : 12.50 : + 0.15
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 200
Check speed 1/min	: > 80
Check speed 1/min	: < 250
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 120.0 : + 1.0 : + 4.0
STARTING FUEL DEL	IVERY
Set starting CRT	at K-cam.

Rated speed rpm	:		100
rack travel mm	:		13.50
Tolerance mm	:	+	0.20
Del. quantity			
cm3/1000 strokes	:		150.0
Tolerance			
cm3/1000 strokes	:	+-	15.0
Check tolerance			
cm3/1000S.	:	+	19.0

# LOW IDLE

Rated speed rpm	:		350
Rack travel in mm Tolerance mm	:	+	6.00 0.10
Del. quantity cm3/1000 strokes			13.0
Tolerance	•		13.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000S.	:	+-	6.0
Spreed Tolerance			
cm3/1000 strokes	:		4.0
Check tolerance			0.0
cm3/1000S.	:		8.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 22,11,91 : ISO-4113

Combination No.

: 0 400 866 154

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number

: -4 : 9 410 230 030

Governor

Governer design. : RSV450...1100A0C2241

Governer no.

: 0 420 233 256

Cust. part No.

Customer-spec. information

Customer : C.D.C.

Motor

: 6CT830

Power KW

: 134.2

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test lines

: 1 680 750 014

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

### REMARKS

: C.D.C. # 3915995

Adjust stop lever to 0.5...1.0 mm

before stop.

Start-of-delivery mark 11° cam angle

after start of delivery cyl. 1

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in

full-load delivery with torque-control

spring retainer.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 28.0 Tolerance bar : + 1.0

Prestroke mm : 2.85

Tolerance mm

: **←** 0.05

tolerance mm :  $\leftarrow 0.10$ 

Rack travel in mm: 10.50

Firing order

: 1-5-3-6-2

: - 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: + 0.50

Check

tolerance °NW

: + 0.75

Start of delivery mark

°NW after s.o.d. :

11.0

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.25 Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 104.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

: + 3.00cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

: 450.0 Rated speed rpm

Rack travel in mm : 5.80

: + 0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 18.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

: + 4.50

cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

: 5.0 cm3/1000S.

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : -3 Rated speed rpm : 800

Rack travel in mm: 0.50

Tolerance mm:  $\leftarrow 0.20$ 

governor spring

pre-tension

click setting x : ?

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

hPa : 900

Del. quantity

cm3/1000 strokes : 104.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 3.00

Spreed Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 6.0

CONTROL LEVER

control lever

position degree : 53.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.20 Rated speed rpm : 1145.0 Tolerance 1/min : +- 5.0

rack travel mm : 4.00 : 1225.0 Rated speed rpm Tolerance 1/min : +- 15.0

: 4.00 rack travel mm : 1230.0 Rated speed rpm

rack travel mm : 0.85 : +- 0.55 Tolerance mm : 1300 Rated speed rpm

LOW IDLE

control lever

position degree : 33.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 450 rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 19.00

Testing:

Rated speed rpm : 450 rack travel mm : 5.80 Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 11.25 Tolerance mm : + 0.05

Rated speed rpm : 750 rack travel mm : 12.10 Tolerance mm : +- 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 12.10
Tolerance mm : + 0.10

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : rack travel mm : 10.75
Tolerance mm : +- 0.05

Pressure hPa : 305 rack travel mm : 11.15 Tolerance mm : + 0.05

Pressure hPa : 425 rack travel mm : 11.70 Tolerance mm : + 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900 Rated speed rpm : 750 Del. quantity

cm3/1000 strokes : 114.50

Tolerance

cm3/1000 strokes :  $\leftarrow 2.00$ 

Check tolerance

cm3/1000s. : +-4.00

Aneroid pressure

nPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 81.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.00

Check tolerance

cm3/1000s. : +- 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : + 0.50

Del. quantity

cm3/1000 strokes : 145.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.00

Check tolerance

cm3/1000s. : +- 15.00

LOW IDLE

Rated speed rpm : 450.0

Rack travel in mm : 5.80 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 18.00

Tolerance

cm3/1000 strokes : + 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 18.12.92 : ISO-4113

Combination No. : 0 402 036 743

Injection pump

Pump designation : PES6P120A720/3LS3255

EP type number : 0 412 026 739

Governor

Governer design. : RQ300/1000PA813-19

Governer no. : 0 421 801 561

Cust. part No. :

Customer-spec. information

Customer : MAN

Motor

: D2866LF05

Power KW

: 272.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter: 3.00

x Length mm : 1000

B09

#### REMARKS

: MAN-NR. 3-7037

Setting and blocking of pointer of start-of-delivery sensor on cyl. 6 start of delivery

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 31.0 Tolerance bar : +- 1.0

Prestroke mm : 3.75
Tolerance mm : +- 0

: +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 15.00

Tolerance mm :  $\leftarrow 0.50$ 

Firing order

: 6-2-4-1-5

: - 3

Phasing

: 0-60-120-180-240

: -300 : +- 0.50

Tolerance

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Barrel no. : 6

### BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15

Tolerance mm :  $\leftarrow 0.05$ 

Del. quantity

cm3/1000 strokes : 245.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

: + 4.00cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000S.

: 9.0

Rated speed rpm : 300.0

Rack travel in mm: 5.00

Tolerance mm :  $\leftarrow 0.20$ 

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

: +- 6.00 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. : 12.0

(B) SETTING OF INJECTION PUMP

WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : -2

Rated speed rpm : 550

Rack travel in mm : 20.00

Tolerance mm : + 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

: 700 Rated speed rpm

Aneroid pressure

: 1200 hPa

Del. quantity

cm3/1000 strokes : 245.00

Tolerance

cm3/1000 strokes :  $\leftarrow 1.00$ 

Check tolerance

cm3/1000s. : +- 4.00 Spreed

Tolerance

cm3/1000 strokes : 5.0

Check tolerance

cm3/1000s. : 9.0

RATED SPEED

rack travel mm : 20.0

Rated speed rpm : 550

: 14.10 rack travel mm

Rated speed rpm : 1052.5 Tolerance 1/min : +- 7.5

rack travel mm : 4.00

Rated speed rpm : 1170.0

Tolerance  $1/\min$ : + 15.0

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1300

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 300

rack travel mm : 5.0

Rated speed rpm : 200

CRT mm min. : 6.50

Testing:

Rated speed rpm : 300

rack travel mm : 5.00 Tolerance mm : +- 0.20

rack travel mm : 2.00 Rated speed rpm : 380.0

Tolerance 1/min

: +- 20.0

TORQUE CONTROL

: ?

Dimension a mm Rated speed rpm : 700

rack travel mm : 15.15

Tolerance mm

: +- 0.05

Rated speed rpm

: 700

rack travel mm : 15.60 Tolerance mm : +- 0.10

**B10** 

# ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 15.15
Tolerance mm : +- 0.05

### **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : rack travel mm : 11.90
Tolerance mm : + 0.10

Pressure hPa : 110 rack travel mm : 12.15 Tolerance mm : + 0.05

Pressure hPa : 470 rack travel mm : 14.00 Tolerance mm : + 0.20

#### Start interlock

Rated speed rpm : 220

Check

speed 1/min : 240

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 1000

Del. quantity

cm3/1000 strokes : 244.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 135.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 200.00

Tolerance

cm3/1000 strokes : +- 10.00

Check tolerance

cm3/1000s. : +- 14.00

### LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 5.00 Tolerance mm : +- 0.20

Del. quantity

cm3/1000 strokes : 20.00

Tolerance

cm3/1000 strokes : +- 3.00

Check tolerance

cm3/1000s. : +- 6.00

Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 26.05.97

Test oil

: ISO-4113

Combination No. : 0 402 046 858

Injection pump

Pump designation : PES6P110A320LS3330

EP type number : 0 412 016 745

Governor

Governer design. : RQV350...1250PA1127K

Governer no. : 0 421 815 384

Cust. part No. :

Customer-spec. information

Customer : NAVISTAR

Motor

: DTA-408

Power KW

: 138.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.80

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: **←** 1.5

Test lines

: 1 680 750 015

Outside diameter : 6.00

x inside diameter: 3.00

x Length mm : 600

B12

REMARKS

: NAVISTAR #1823105c91

Start-of-delivery blocking at start of delivery of cylinder no. 1.

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : +- 1.0

Prestroke mm : 3.00 Tolerance mm : +- 0.05

Check

tolerance mm :  $\leftarrow 0.15$ 

Rack travel in mm : 15.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +-0.75

Start of delivery mark

Barrel no.

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 112.00

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance : + 3.00cm3/1000s. Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 : 325 Rated speed rpm Rack travel in mm: 7.70 Tolerance mm : +- 0.10Del. quantity cm3/1000 strokes : 28.00 Tolerance cm3/1000 strokes : +- 2.00 Check tolerance cm3/1000s. : <del>←</del> 5.00 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL Rated speed rpm : 350 auide sleeve travel mm : 2.00 Tolerance mm : + 0.10Rated speed rpm : 500 auide sleeve travel mm : 4.30 Tolerance mm : +- 0.20 Rated speed rpm : 850 guide sleeve travel mm : 7.20 : +- 0.20 Tolerance mm : 1250 Rated speed rpm quide sleeve travel mm : 9.60 : + 0.10Tolerance mm Rated speed rpm : 1450

: 11.20

Tolerance mm : +-0.20GUIDE SLEEVE POSITION control lever position degree : -1 FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 850 Aneroid pressure hPa : 1200 Del. quantity cm3/1000 strokes : 112.00 Tolerance cm3/1000 strokes : + 1.00Check tolerance cm3/1000s. : + 3.00Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0 CONTROL LEVER control lever position degree : 120.0 tolerance degree : +- 6.0 RATED SPEED : 11.90 rack travel mm Rated speed rpm : 1305.0 Tolerance 1/min : + 15.0 : 4.00 rack travel mm : 1455.0 Rated speed rpm Tolerance 1/min : +- 5.0 rack travel mm : 0.50 Tolerance mm : + 0.50 : 1600 Rated speed rpm LOW IDLE control lever

position degree : 79.0 tolerance degree : +- 6.0

Setting point w/out bumper spring

guide sleeve

travel mm

Rated speed rpm : 325 rack travel mm : 7.7

Testing:

Rated speed rpm : 325 rack travel mm : 7.70 Tolerance mm : +- 0.10

Rated speed rpm : 275

CRT mm max. : 8.50

TORQUE CONTROL

Dimension a mm : ?
Rated speed rpm : 850
rack travel mm : 12.35
Tolerance mm : + 0.05

Rated speed rpm : 1250 rack travel mm : 13.10 Tolerance mm : + 0.10

Rated speed rpm : 700 rack travel mm : 12.00 Tolerance mm : + 0.20

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 1250
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1250

Pressure hPa : rack travel mm : 11.00
Tolerance mm : + 0.20

Pressure hPa : 250 rack travel mm : 11.35 Tolerance mm : + 0.05

Pressure hPa : 450 rack travel mm : 12.50 Tolerance mm : +- 0.20

Start interlock

Rated speed rpm : 280

Check

**speed 1/min** : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200 Rated speed rpm : 1250

Del. quantity

cm3/1000 strokes : 128.00

Tolerance

cm3/1000 strokes : + 2.00 Check tolerance

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

Spreed

Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.0

rack travel mm : 12.00 Tolerance mm : +- 0.20

Aneroid pressure

hPa : -

Rated speed rpm : 1250 Del. quantity

cm3/1000 strokes : 88.50

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 4.00$ 

STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.50 Tolerance mm : +- 1.00

Del. quantity

cm3/1000 strokes : 140.00

Tolerance

cm3/1000 strokes : +- 20.00

Check tolerance

cm3/1000s. : +- 25.00

LOW IDLE

Rated speed rpm : 325

Rack travel in mm: 7.70 : +- 0.10 Tolerance mm

Del. quantity cm3/1000 strokes : 28.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

: ← 5.00 cm3/1000s.

Spreed Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.06.97 : ISO-4113

Combination No. : 0 402 648 971

Injection pump

Pump designation : PE8P120A320LS7830 EP type number : 0 412 628 844

Governor

Governer design. : RQV350...1050PA1109

Governer no. : 0 421 814 078

Cust. part No. :

Customer—spec. information

Customer : MTU

Motor

: 8V 183 TE72

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holde

assembly

: 1 688 901 019

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.00

x inside diameter: 3.00

x Length mm : 1000

**B16** 

REMARKS

\* = Set at reduced-delivery stop.

**APPLICATION** 

Ship

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 26.0

Tolerance bar : +- 1.0

Prestroke mm : 4.45

Tolerance mm

: + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20,25

Tolerance mm : + 0.75

Firing order : 8-7-2-6-3-5-4-1

Phasing

: 0-45-90-135-180-225

Tolerance

: -270-315 : +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.35

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 261.00

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance : +- 4.00 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance : 9.0 cm3/1000S. : 350 Rated speed rpm Rack travel in mm : 5.20 : +- 0.30 Tolerance mm Del. quantity cm3/1000 strokes : 15.00 Tolerance cm3/1000 strokes : +- 3.00Check tolerance : +-6.00cm3/1000s. Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0 (B) SETTING OF INJECTION PUMP WITH GOVERNOR GUIDE SLEEVE TRAVEL : 350 Rated speed rpm auide sleeve : 1.53 travel mm : + 0.20Tolerance mm Rated speed rpm : 570 auide sleeve travel mm : 3.57 Tolerance mm : + 0.25: 900 Rated speed rpm auide sleeve travel mm : 5.69 : +- 0.25Tolerance mm Rated speed rpm : 1204 quide sleeve travel mm : 10.00 : + - 0.25Tolerance mm Rated speed rpm : 1300

: 11.50

Tolerance mm : +-0.50GUIDE SLEEVE POSITION control lever : -1 position degree Rated speed rpm : 1170 Rack travel in mm: 12.35 Tolerance mm : + 0.30FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1050 Aneroid pressure hPa : 2000 Del. quantity cm3/1000 strokes : 261.00 Tolerance cm3/1000 strokes : +- 1.00Check tolerance cm3/1000s. : + 4.00Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0 CONTROL LEVER control lever position degree : 120.0 tolerance degree : +- 4.0 RATED SPEED rack travel mm : 12.35 Rated speed rpm : 1105.0 Tolerance 1/min : +- 5.0 rack travel mm : 4.00 Rated speed rpm : 1185.0 Tolerance 1/min : +- 15.0 rack travel mm : 0.50 : +- 0.50 Tolerance mm Rated speed rpm : 1250

LOW IDLE

guide sleeve travel mm control lever

position degree : 66.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : 6.70

Testing:

Rated speed rpm : 350 rack travel mm : 5.20 Tolerance mm : + 0.30

TORQUE CONTROL

Rated speed rpm : 1050 rack travel mm : 13.35 Tolerance mm : + 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : rack travel mm : 7.00
Tolerance mm : + 0.15

**MEASUREMENT** 

Rated speed rpm : 500

Pressure hPa : 400 rack travel mm : 8.45 Tolerance mm : + 0.05

Pressure hPa : 1200 rack travel mm : 13.05 Tolerance mm : + 0.20

Pressure hPa : 2000 rack travel mm : 13.35 Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 2000 Rated speed rpm : 750 Del. quantity

cm3/1000 strokes : 254.00

Tolerance

cm3/1000 strokes : +-3.00

Check tolerance

cm3/1000s. :  $\leftarrow 6.00$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.0

Aneroid pressure

hPa : 2000 Rated speed rpm : 1050

Del. quantity

cm3/1000 strokes : 195.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. :  $\leftarrow 5.00$ 

Aneroid pressure

hPa : -Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 99.00

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.00

Check tolerance

cm3/1000s. :  $\leftarrow 3.50$ 

Spreed Tolerance

cm3/1000 strokes : 8.00

Check tolerance

cm3/1000s. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 345.00

Tolerance

cm3/1000 strokes : +- 10.00

Check tolerance

cm3/1000s. : +- 14.00

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.20 Tolerance mm : +- 0.30

Del. quantity cm3/1000 strokes : 15.00

Tolerance

cm3/1000 strokes :  $\leftarrow 3.00$ 

Check tolerance

cm3/1000s. : +- 6.00

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 14.02.94 : ISO-4113

Combination No. : 0 403 466 146

Injection pump

Pump designation : PES6MW100/120RS1137

: -1

EP type number

: 0 413 406 157

Governor

Governer design. : RSV500...1100MW2A335

: -7

Governer no.

: 0 420 085 235

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor

: 6CTA

Power KW

: 172.0

### TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C

: 40.0

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.00

x inside diameter: 2.00 x length mm : 600

REMARKS

: CDC #3926219

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 31.0

Tolerance bar :  $\leftarrow$  1.0

Prestroke mm : 3.55 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50

Tolerance mm : +-1.50

Firing order

: 1-5-3-6-2

: - 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50 Check

tolerance °NW : +- 0.75

Start of delivery mark

°NW after s.o.d. : 11.00

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.35

Tolerance mm : +-0.05

Del. quantity

cm3/1000 strokes : 132.50

B20

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 7.0

Rated speed rpm : 500

Rack travel in mm: 6.40

Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 21.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spreed

Tolerance

cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever

position degree : -3

Rated speed rpm : 800

Rack travel in mm: 0.65

Tolerance mm : + 0.35

governor spring

pre-tension

click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

Aneroid pressure

: 1200 hPa

Del. quantity

cm3/1000 strokes : 132.50

Tolerance

cm3/1000 strokes : +- 1.00

Check tolerance

cm3/1000s. : +-4.00

Spreed

Tolerance

cm3/1000 strokes : 4.0

Check tolerance

: 7.0 cm3/1000s.

CONTROL LEVER

control lever

position degree : 102.0

tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.30

Rated speed rpm : 1160.0

Tolerance 1/min : +- 10.0

rack travel mm : 4.00

Rated speed rpm : 1265.0

Tolerance 1/min : +- 5.0

rack travel mm : 1.00

Tolerance mm : + 0.70

Rated speed rpm : 1350

LOW IDLE

control lever

position degree : 81.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 500

rack travel mm : 6.40

Rated speed rpm : 100

CRT mm min. : 19.0

Testing:

Rated speed rpm : 500 rack travel mm : 6.40

Tolerance mm : +- 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 4.00

TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 13.75 : +- J.05 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500 Pressure hPa : 1200 rack travel mm : 14.50 Tolerance mm :  $\leftarrow 0.10$ 

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 11.45 rack travel mm Tolerance mm : +- 0.10

Pressure hPa : 275 rack travel mm : 12.15 : **←** 0.05 Tolerance mm

: 425 : 13.30 Pressure hPa rack travel mm : +- 0.20 Tolerance mm

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

: 1200 hPa Rated speed rpm : 1100

Del. quantity

cm3/1000 strokes : 132.50

Tolerance

cm3/1000 strokes : + 1.00

Check tolerance

cm3/1000s. : +- 4.00

Spreed Tolerance

cm3/1000 strokes : 4.00

Check tolerance

cm3/1000s. : 7.5

STARTING FUEL DELIVERY

Rated speed rpm : 100

**B22** 

Del. quantity

cm3/1000 strokes : 130.00

Tolerance

cm3/1000 strokes : +- 10.00

Check tolerance

cm3/1000s. : +- 13.00

LOW IDLE

Rated speed rpm : 500

Rack travel in mm : 6.40 Tolerance mm : +-0.10

Del. quantity cm3/1000 strokes : 21.00

Tolerance

cm3/1000 strokes : +- 2.00

Check tolerance

cm3/1000s. : +- 4.50

Spreed

Tolerance cm3/1000 strokes : 3.0

Check tolerance

cm3/1000s. : 5.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 11.09.97 Test oil : ISO 4113

Combination No. : 9 400 030 696

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1250A0C826R

Governer no. : 9 420 034 700

Cust. part No. : 3928662

Customer-spec. information

Customer : CUMMINS : 6BT - 165 HP Motor

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C

Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85 Tolerance mm : ← 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm: 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 4

: 0-60-120-180-240 Phasing

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00 Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : + 0.29

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 12.60

Tolerance mm	: +- 0.05	+ Del. quantity + cm3/1000 stroke
Del. quantity cm3/1000 strokes	: 106.0	Tolerance cm3/1000 stroke Check tolerance
Tolerance cm3/1000 strokes	: +- 1.0	cm3/1000s. Spreed Tolerance
Check tolerance cm3/1000s.	: +- 3.0	cm3/1000 stroke Check tolerance cm3/1000s.
Spreed		1
Tolerance cm3/1000 strokes	: 4.0	CONTROL LEVER
Check tolerance cm3/1000s.	: 6.5	control lever position degree tolerance degre
Rated speed rpm	: 475	RATED SPEED rack travel mm Rated speed rpm
Rack travel in mm Tolerance mm	: 5.50 : ← 0.10	Tolerance 1/min
Del. quantity cm3/1000 strokes	: 20.5	rack travel mm Rated speed rpm Tolerance 1/min
Tolerance cm3/1000 strokes Check tolerance	: +- 2.0	rack travel mm
cm3/1000s. Spreed	: +- 4.5	Tolerance mm Rated speed rpm
Tolerance cm3/1000 strokes Check tolerance	: 6.0	rack travel mm Tolerance mm
cm3/1000s.	: 8.0	Rated speed rpm Tolerance 1/min
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	‡
		LOW IDLE
GUIDE SLEEVE POSIT	ION	T control lever
Rated speed rpm	: 800	position degree
Rack travel in mm Tolerance mm		Setting point w
governor spring pre-tension click setting x	: 4.50	Rated speed rpm rack travel mm Tolerance mm
FULL LOAD DELIVERY	AT FULL LOAD STOP	Rated speed rpm
	: 1250	CRT mm min.
Aneroid pressure	: 800	Testing:

Del. quantity cm3/1000 strokes	: 106.0
Tolerance cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000s. Spreed	: +- 3.0
Tolerance cm3/1000 strokes	: 4.0
Check tolerance cm3/1000s.	: 6.5
CONTROL LEVER	
control lever position degree tolerance degree	: 111.0 : +- 4.0
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 11.60 : 1315 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1415 : + 5
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : + 0.55 : 1500
rack travel mm Tolerance mm Rated speed rpm Tolerance 1/min	: 4.00 : +- 0.05 : 1420 : +- 15
LOW IDLE	

ee : 85.0 ree : + 4.0

w/out bumper spring

: 475 : 5.00 : + 0.10

: 100

: > 19.50

Rated speed rpm : 475 rack travel mm : 5.50 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 575 Tolerance 1/min : + 30  TORQUE CONTROL Rated speed rpm : 1250 rack travel mm : 12.60 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 12.70 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 500 Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 800 Pressure hPa : - 0.10  Rated speed rpm : 500 Pressure hPa : - 11.00 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500 Pressure hPa : 655 rack travel mm : 11.00 Tolerance mm : + 0.20  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance cm3/1000 strokes : + 2.0			
Rated speed rpm : 575 Tolerance 1/min : ← 30  TORQUE CONTROL Rated speed rpm : 1250 rack travel mm : 12.60 Tolerance mm : ← 0.05  Rated speed rpm : 750 rack travel mm : 12.70 Tolerance mm : ← 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 500 Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : ← 0.10  Rated speed rpm : 500 Pressure hPa : 500 Pressure hPa :	rack travel mm	: 475 : 5.50 : ← 0.10	
Rated speed rpm : 1250 rack travel mm : 12.60 Tolerance mm : +- 0.05  Rated speed rpm : 750 rack travel mm : 12.70 Tolerance mm : +- 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 500 Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : +- 0.10  Rated speed rpm : 500 Pressure hPa : 500 Pressure hPa : rack travel mm : 11.00 Tolerance mm : +- 0.20  MEASUREMENT  Rated speed rpm : 500 Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : +- 0.20  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : +- 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : +- 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	Rated speed rpm	: 575	
rack travel mm : 12.70 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 500 Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : - rack travel mm : 11.00 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500 Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	Rated speed rpm rack travel mm	: 12.60	
SETTING  Rated speed rpm : 500 Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : - rack travel mm : 11.00 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500 Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	rack travel mm	: 12.70	
Rated speed rpm : 500 Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : - rack travel mm : 11.00 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500 Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance			
Pressure hPa : 800 rack travel mm : 12.70 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : - rack travel mm : 11.00 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	SETTING		
Pressure hPa : - rack travel mm : 11.00 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 500  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	Pressure hPa rack travel mm	: 800 : 12.70	
Rated speed rpm : 500  Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : +- 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : +- 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	Pressure hPa rack travel mm	: – : 11.00	
Pressure hPa : 655 rack travel mm : 12.30 Tolerance mm : + 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	MEASUREMENT		
rack travel mm : 12.30 Tolerance mm : +- 0.20  Pressure hPa : 500 rack travel mm : 11.70 Tolerance mm : +- 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	Rated speed rpm	: 500	
rack travel mm : 11.70 Tolerance mm : + 0.20  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	rack travel mm	: 12.30	
Aneroid pressure hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	rack travel mm	: 11.70	
hPa : 800 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 113.8 Tolerance	FUEL DELIVERY CHARACTERISTICS		
cm3/1000 strokes : 113.8 Tolerance	hPa Rated speed rpm		
	cm3/1000 strokes Tolerance		

Check tolerance cm3/1000s.	: +- 4.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
Rated speed rpm	: 475
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: <del></del> 0.10

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 02.06.97 : U2.U0.77 : ISO 4113

Combination No. : 0 400 866 198

Injection pump

Pump designation : PES6A100D320/3RS2763

EP type number : 0 410 806 006

Governor

Governer design. : RSV400...950A0C2238

: -4R

Governer no. : 0 420 233 331

Cust. part No. :

Customer-spec. information

Customer : CDC

Motor

: 6 CT 8.3

Power KW : 145.0

### TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

208.5 bar

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 2.85 : **←** 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : 10.00 Tolerance

Check

: +- 0.50

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

950 Rated speed rpm :

Rack travel in mm : 12.15

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 121.5	Aneroid pressure hPa : 900 Del. quantity
Tolerance cm3/10u0 strokes : +- 1.0	cm3/1000 strokes : 121.5 Tolerance
Check tolerance	cm3/1000 strokes : ← 1.0 Check tolerance
cm3/1000s. : + 3.5	cm3/1000s. : +- 3.5 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CONTROL LEVER
+	
Rated speed rpm : 400	control lever position degree : 96.0
+	tolerance degree : + 4.0
Rack travel in mm: 5.20	DATED ODEED
Tolerance mm : + 0.10 + Del. quantity +	RATED SPEED rack travel mm : 11.10
cm3/1000 strokes : 15.0	Rated speed rpm : 995
Tolerance	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 +	
Check tolerance +	rack travel mm : 4.00
cm3/1000s. : +- 4.5	Rated speed rpm : 1070
Spreed +	Tolerance 1/min : +- 5
Tolerance +	
cm3/1000 strokes : 6.0	rack travel mm : 0.85
Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 1200
cm3/1000s. : 8.0	Rated speed rpm : 1200
I	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1085
WITH GOVERNOR	Tolerance 1/min : + 15
+	
+	
CHIEF OF EACH DOCKETON	
GUIDE SLEEVE POSITION	LOW IDLE
$\frac{1}{4}$	FOW IDEE
control lever	
position degree : -3	control lever
Rated speed rpm : 800	position degree : 79.0
t	tolerance degree : +- 4.0
Rack travel in mm: 0.50	
Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring	Rated speed rpm : 400
pre-tension +	rack travel mm : 4.70
click setting x : 2.50	Tolerance mm : + 0.10
+	
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP +	
	CRT mm min. : > 19.00
Rated speed rpm : 950	Tooting
+	Testing:

Rated speed rpm rack travel mm Tolerance mm	: 400 : 5.20 : +- 0.10	
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 470 : + 30	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 950 : 12.15 : ← 0.05	
ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 900 : 12.15 : + 0.05	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.80 : +- 0.10	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 305 : 11.70 : + 0.20	
Pressure hPa rack travel mm Tolerance mm	: 220 : 11.20 : + 0.05	
FUEL DELIVERY CHARACTERISTICS		
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: - : 500 : 76.5	
cm3/1000 strokes	: <del>+-</del> 2.0	

STARTING FUEL DEL	IVERY		
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: : : +-	100 20.25 0.75	
cm3/1000 strokes Tolerance	:	160.0	
cm3/1000 strokes Check tolerance	: +-	10.0	
cm3/1000s.	: +-	13.0	
LOW IDLE			
LOW IDEE			
	:	400	
Rated speed rpm Rack travel in mm Tolerance mm	: : +-	400 5.20 0.10	
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: : +- :	5.20	
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: +-	5.20 0.10	
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: +-	5.20 0.10 15.0	
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +-	5.20 0.10 15.0 2.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 25,11,97 : ISO 4113

Combination No. : 0 400 466 086

Injection pump

Pump designation : PES6A75D410/3RS1326

EP type number : 0 410 476 977

Governor

Governer design. : RSV325...900A7C602L

Governer no. : 0 420 232 320

Cust. part No. :

Customer-spec. information

Customer : KHD

Motor

: F6I 912

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 417 413 000

Inlet press. bar : 1.0

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

x length mm : 600

REMARK:

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

BASIC SETTING

Rated speed rpm : 880

Rack travel in mm : 10.25 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 44.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s.

: +- 2.0

Spreed

Tolerance

cm3/1000 strokes :

2.0

Check tolerance

cm3/1000s.

3.5

Rated speed rpm : 325

Rack travel in mm: 7.20

Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 12.0

Tolerance +	
cm3/1000 strokes : +- 3.0 +	rack travel mm : 1.00
Check tolerance	rack travel mm : 1.00 Tolerance mm : +- 0.70
cm3/1000s. : + 4.5	Rated speed rpm : 1050
Spreed	Ratea speca i piii : 1050
	rack travel mm : 4.00
Tolerance +	
cm3/1000 strokes : 2.0	Rated speed rpm : 970
Check tolerance	Tolerance 1/min : +- 15
cm3/1000s. : 3.0 +	
†	
+	
(B) SETTING OF INJECTION PUMP +	
WITH GOVERNOR +	LOW IDLE
+	
+	
	control lever
GUIDE SLEEVE POSITION +	position degree : 25.0
+	tolerance degree : +- 4.0
+	
control lever	Setting point w/out bumper spring
position degree : -3	
Rated speed rpm : 800 +	Rated speed rpm : 325
	rack travel mm : 7.70
Rack travel in mm: 0.65	rack travel mm : 7.70 Tolerance mm : + 0.10
Tolerance mm : + 0.35	1000141100 11111
Totel diffe limit	Rated speed rpm : 100
	Nated Speed 1pm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.50
TOLE LOAD DECIVER! AT FOLL COAD STOP	CR ( III) III III
Dated aread man . 990	Tosting
Rated speed rpm : 880 +	Testing:
Aneroid pressure	705
hPa : - +	Rated speed rpm : 325
Del. quantity +	rack travel mm : 7.20
cm3/1000 strokes : 44.0 +	Tolerance mm : + 0.10
Tolerance +	
cm3/1000 strokes : + 0.5 +	rack travel mm : 2.00
Check tolerance +	Rated speed rpm : 430
cm $3/1000$ s. : $\leftarrow$ 2.0 $+$	Tolerance 1/min : +- 30
Spreed +	
Tolerance +	
cm3/1000 strokes : 2.0 +	TORQUE CONTROL
Check tolerance	Rated speed rpm : 880
cm3/1000s. : 3.5	rack travel mm : 10.25
+	Tolerance mm : +- 0.05
1	
	Rated speed rpm : 500
CONTROL LEVER	rack travel mm : 10.30
	Tolerance mm : +- 0.10
control lever	
position degree : 54.0	
tolerance degree : + 4.0	
Loter ance degree : 1 4.0	
DATEN SDEEN	
RATED SPEED	
rack trayel mm : 9.20	CTARTING FUEL DELTHERY
Rated speed rpm : 925	STARTING FUEL DELIVERY
Tolerance 1/min : + 5	2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
†	Rated speed rpm : 100
rack travel mm : 4.00 +	
Rated speed rpm : 960 +	
Tolerance 1/min : +- 15	
· · · · · · · · · · · · · · · · · · ·	

## LOW IDLE

Rated speed rpm	:	325	
Rack travel in mm Tolerance mm Del. quantity	: +	7.20 0.10	
	:	12.0	
cm3/1000 strokes Check tolerance	: +-	3.0	
cm3/1000S. Spreed Tolerance	: +-	4.5	
cm3/1000 strokes Check tolerance	:	2.0	
cm3/1000s.	:	3.0	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.12.97 Edition : ISO 4113 Test oil

Combination No. : 0 403 244 036

Injection pump

Pump designation : PES4MW100/720RS1519

: -3

EP type number : 0 413 204 018

Governor

: RQV300...1300MW132 Governer design.

: -5

Governer no. : 0 420 083 308

Cust. part No. : 9240740902

Customer-spec. information Customer : MB-NFZ

: 0M364LA Motor Power KW : 77.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

: 1 419 992 198 Overflow valve

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : +- 1.0

: 4.55 Prestroke mm Tolerance mm : **←** 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : + - 0.50

Check

tolerance °NW : **←** 0.75

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 11.15 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes : 87.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

: +- 3.0 cm3/1000s.

Spreed

#-1	
Tolerance + cm3/1000 strokes : 4.5 +	Rated speed rpm : 1596
this root strokes .	guide sleeve
Check tolerance	travel mm : 12.00
cm3/1000s. : 7.0	Tolerance mm : +- 0.25
	2400
†	Rated speed rpm : 1690
Rated speed rpm : 300	guide sleeve travel mm : 13.50
Rated speed (pill : 300	Tolerance mm : + 0.50
Rack travel in mm: 4.00	10 201 41100 11111
Tolerance mm : + 0.10	
Del. quantity +	GUIDE SLEEVE POSITION
cm3/1000 strokes : 12.0 +	
Tolerance + 3.0	control loves
cm3/1000 strokes : + 2.0 + Check tolerance +	control lever position degree : 120
cm3/1000s. : + 4.5	Rated speed rpm : 1500
Spreed	Table space form a table
Tolerance +	Rack travel in mm : 10.00
cm3/1000 strokes : 2.0	Tolerance mm : +- 2.00
Check tolerance	
cm3/1000s. : 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Ī	FULL LOAD DELIVERY AT FULL LOAD STOP
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1300
WITH GOVERNOR +	Aneroid pressure
+	hPa : 700
AUTOR OF PRICE TRAVEL	Del. quantity cm3/1000 strokes : 87.0
GUIDE SLEEVE TRAVEL	cm3/1000 strokes : 87.0 Tolerance
Rated speed rpm : 1353	cm3/1000 strokes : +- 1.0
guide sleeve	Check tolerance
travel mm : 7.76	cm3/1000s. : +- 3.0
Tolerance mm : + 0.25 +	Spreed
	Tolerance
Rated speed rpm : 300	cm3/1000 strokes : 4.5 Check tolerance
guide sleeve + travel mm : 0.91 +	cm3/1000s. : 7.0
Tolerance mm : + 0.25	
+	
Rated speed rpm : 1140	
guide sleeve	CONTROL LEVER
travel mm : 5.88 + Tolerance mm : + 0.25 +	control lever
Total alice into	position degree : 112.0
Rated speed rpm : 629	tolerance degree : + 4.0
guide steeve +	
travel mm : 3.15 +	RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 10.10 Rated speed rpm : 1345
Rated speed rpm : 679	Tolerance 1/min : +- 5
guide sleeve	TO COT MITTOUR TO THE PERSON OF THE PERSON O
travel mm : 3.53	rack travel mm : 4.00
Tolerance mm : +- 0.25	Rated speed rpm : 1435
+	Tolerance 1/min : + 15
Rated speed rpm : 800	rack travel mm : 0.50
guide sleeve + travel mm : 4.00 +	Tolerance mm : +- 0.50
Tolerance mm : + 0.25	Rated speed rpm : 1550

LOW IDLE	
control lever position degree tolerance degree	: 70.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 4.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 4.00 : + 0.10
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1300 : 11.15 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 11.15 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
CRT ZERO POSITION	
Rack travel in mm Tolerance mm	: 10.80 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 11.15 : + 0.05
Rated speed rpm Pressure hPa Tolerance mm	: 500 : - 0.10
MEASUREMENT	
	500
Rated speed rpm	: 500

Tolerance mm	: +- 0.10
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 200
Check speed 1/min Check	: > 80
speed 1/min	: < 220
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 700 : 750
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance	: +- 1.5
cm3/1000s. Spreed Tolerance	: +- 4.0
cm3/1000 strokes	: 6.0
Check tolerance cm3/1000s.	: 9.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	
cm3/1000s.	: <del></del> 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm Del. quantity	: 100
cm3/1000 strokes Tolerance	: 125.0
cm3/1000 strokes Check tolerance	: +- 5.0
cm3/1000s.	: +- 8.0
LOW IDLE	

C06

Rated speed rpm	:	300
Rack travel in mm Tolerance mm Del. quantity	: : +-	4.00 0.10
cm3/1000 strokes	:	12.0
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.5
Spreed Tolerance cm3/1000 strokes	:	2.0
Check tolerance cm3/1000s.	:	4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 15.12.97 Edition : ISO 4113 Test oil

Combination No. : 0 403 244 036A

Injection pump

Pump designation : PES4MW100/720RS1519

: -3

EP type number : 0 413 204 018

Governor

Governer design. : RQV300...1300MW132

: -5

: 0 420 083 308 Governer no.

Cust. part No. : 0240740902

Customer-spec. information Customer : MB-NFZ : 0M364LA Motor Power KW : 77.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

3.0 x inside diameter :

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 31.0 Tolerance bar : + 1.0

Prestroke mm : 4.55 Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 20.00 Tolerance mm : +- 1.00

Firing order : 1-3-4-2

: 0-90-180-270 Phasing Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Del. quantity

Rated speed rpm : 1270

Rack travel in mm: 11.15

Tolerance mm :  $\leftarrow$  0.05

cm3/1000 strokes : 87.0

Tolerance cm3/1000 strokes : +- 1.0

Check tolerance : +- 3.0 cm3/1000s.

Spreed

Tolerance	•
cm3/1000 strokes : 4.5	GUIDE SLEEVE POSITION
Check tolerance	GOIDE STEENE LOSTIION
cm3/1000s. : 7.0	
11.0	control lever
	position degree : VL
<u> </u>	F
Rated speed rpm : 300	control lever
+	position degree : 115
Rack travel in mm: 4.00	Rated speed rpm : 1500
Tolerance mm : +- 0.10	
Del. quantity	Rack travel in mm : 10.00
cm3/1000 strokes : 12.0	Tolerance mm : +- 2.00
Tolerance	
cm3/1000 strokes : + 2.0 + Check tolerance	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : + 4.5	FOLL LOAD DELIVERY AT FOLL LOAD STOP
Spreed	Rated speed rpm : 1270
Tolerance	Aneroid pressure
cm3/1000 strokes : 2.0	hPa : 700
Check tolerance	Del. quantity
cm3/1000s. : 4.0	cm3/1000 strokes : 87.0
+	Tolerance
<u>+</u>	cm3/1000 strokes : +- 1.0
(B) SETTING OF INJECTION PUMP	Check tolerance
WITH GOVERNOR +	cm3/1000s. : + 3.0
	Spreed Tolerance
GUIDE SLEEVE TRAVEL	cm3/1000 strokes : 4.5
GOIDE SEELVE TRAVEE	Check tolerance
Rated speed rpm : 1353	cm3/1000s. : 7.0
guide sleeve	
travel mm : 7.02 +	
Tolerance mm : + 0.15 +	
	CONTROL LEVER
Rated speed rpm : 300	and all laves
guide sleeve + travel mm : 0.91 +	control lever position degree : 111.0
travel mm : 0.91 + Tolerance mm : + 0.20 +	tolerance degree : +- 4.0
Toterance with . Total I	toterance degree . +- 4.0
Rated speed rpm : 1090	RATED SPEED
guide sleeve	rack travel mm : 10.10
travel mm : 5.21	Rated speed rpm : 1310
Tolerance mm : + 0.25 +	Tolerance 1/min : +- 10
<u></u> +	
Rated speed rpm : 790 +	rack travel mm : 4.00
guide sleeve	Rated speed rpm : 1445
travel mm : 3.98	Tolerance 1/min : +- 5
Tolerance mm : + 0.25	rack travel mm : 0.50
T	
Rated speed rpm : 1759 +	Tolerance mm : +- 11.511
Rated speed rpm : 1759 + quide sleeve +	Tolerance mm : +- 0.50 Rated speed rpm : 1550
Rated speed rpm : 1759 + guide sleeve + travel mm : 12.00 +	Rated speed rpm : +- 0.50
guide steeve +	
guide sleeve travel mm : 12.00 + Tolerance mm : + 0.25	
guide sleeve travel mm : 12.00 + Tolerance mm : + 0.25 + Rated speed rpm : 1870 +	Rated speed rpm : 1550
guide sleeve  travel mm : 12.00 +  Tolerance mm : +- 0.25 +  Rated speed rpm : 1870 +  guide sleeve	
guide sleeve travel mm : 12.00 + Tolerance mm : + 0.25 + Rated speed rpm : 1870 +	Rated speed rpm : 1550

C09

control lever         position degree : 74.0         Check           folerance degree : ← 4.0         speed 1/min : > 80           Setting point w/out bumper spring         speed 1/min : < 220           Rated speed rpm : 200         FUEL DELIVERY CHARACTERISTIC           CRT mm min. : > 4.70         Aneroid pressure hPa : 700           Rated speed rpm : 300 rack travel mm : 4.00 rack travel mm : 4.00 roll rollerance cm3/1000 strokes : 79.0         Tolerance cm3/1000 strokes : 79.0           TORQUE CONTROL Rated speed rpm : 1270 rack travel mm : 11.15 rolerance mm : + 0.05         Spreed roll roll roll roll roll roll roll rol			+ Rated speed rpm	: < 200
Setting point w/out bumper spring	position degree	: 74.0 · + 4.0	- Check	
Rated speed rpm : 200  CRT mm min. : > 4.70  Testing:  Rated speed rpm : 300	toter ance degree	, , 4.0		. > 00
Testing:	Setting point w/ou	ut bumper spring	speed 1/min	: < 220
Aneroid pressure	Rated speed rpm	: 200	FUEL DELIVERY CHA	RACTERISTICS
Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.10  TORQUE CONTROL Rated speed rpm : 1270 rack travel mm : + 0.05  Tolerance mm : + 0.05  Rated speed rpm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 11.15 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  CRT ZERO POSITION Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 10.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 10.05  Rated speed rpm : 500 Pressure hPa : - 700 rack travel mm : + 0.10  Rated speed rpm : 500 Rated speed rpm : 500 Pressure hPa : - 700 Rated speed rpm : 500 Rated speed rpm : 750 Rated speed rpm : 750 Rated speed rpm : 750 Rated spee	CRT mm min.	: > 4.70	1	
Rated speed rpm : 300 rack travel mm : 4.00 Tolerance mm : + 0.10  TORQUE CONTROL Rated speed rpm : 1270 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 750 Rated speed rpm : 750 rack travel mm : 11.15 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  CRT ZERO POSITION  Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : + 0.10  Rated speed rpm : 500 Rated s	Testing:			. 700
TORQUE CONTROL Rated speed rpm : 1270 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 11.15 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  CRT ZERO POSITION  Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : - Tolerance mm : + 0.10  MEASUREMENT	Rated speed rpm	: 300	Rated speed rpm	: 750
TORQUE CONTROL Rated speed rpm : 1270 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 11.15 Tolerance mm : + 0.10  Aneroid pressure hPa : - Rated speed rpm : 500 Rated speed rpm : 10.80 Tolerance mm : + 0.10  Aneroid pressure hPa : - Rated speed rpm : 500 Pressure hPa : - Tolerance mm : + 0.05  Rated speed rpm : 500 Rated speed rpm : 500 Pressure hPa : - Tolerance mm : + 0.10  MEASUREMENT	rack travel mm Tolerance mm	: 4.00 : ← 0.10	+ cm3/1000 strokes	: 79.0
Rated speed rpm   1270			+ cm3/1000 strokes	: +- 1.5
Tolerance mm : + 0.05  Rated speed rpm : 750 rack travel mm : 11.15 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  CRT ZERO POSITION Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Rated speed rpm : 600 Rated	Rated speed rpm	: 1270	+ cm3/1000s.	: +- 4.0
Rated speed rpm : 750  rack travel mm : 11.15  Tolerance mm : + 0.10  ANEROID/ALTITUDE  COMPENSATOR TEST  CRT ZERO POSITION  Rack travel in mm : 10.80  Tolerance mm : + 0.10  Rated speed rpm : 500  Rated speed rpm : 11.15  Rated speed rpm : 10.05  Rated speed rpm : 500  Rated speed rpm : 500  Rated speed rpm : 100  Rated speed rpm : 500  Rated speed rpm : 100  Rate	rack travel mm Tolerance mm	: + 0.05	+ Tolerance	
ANEROID/ALTITUDE COMPENSATOR TEST  ANEROID/ALTITUDE COMPENSATOR TEST  Bel. quantity cm3/1000 strokes : 67.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0  Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : - Tolerance mm : + 0.10  MEASUREMENT  Aneroid pressure hPa : - Rated speed rpm : 500  STARTING FUEL DELIVERY  Pressure hPa : 100 Tolerance cm3/1000 strokes : 125.0 Check tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0				: 6.0
ANEROID/ALTITUDE COMPENSATOR TEST  ANEROID/ALTITUDE COMPENSATOR TEST  Bel. quantity cm3/1000 strokes : 67.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0  Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : - Tolerance mm : + 0.10  MEASUREMENT  Aneroid pressure hPa : - Rated speed rpm : 500  STARTING FUEL DELIVERY  Pressure hPa : 100 Tolerance cm3/1000 strokes : 125.0 Check tolerance cm3/1000 strokes : + 5.0 Check tolerance cm3/1000s. : + 8.0	rack travel mm	: 11.15 : +- 0.10		: 9.0
ANEROID/ALTITUDE COMPENSATOR TEST	, ocor arros mm		Ananaid massum	
Del. quantity   cm3/1000 strokes : 67.0   Tolerance   cm3/1000 strokes : 4   1.0   Check tolerance   cm3/1000s. : +   3.0   Tolerance   cm3/1000s. : +   3.0   Check tolerance   cm3/1000s. : +   3.0	ANEROID/ALTITUDE			•
SETTING       cm3/1000 strokes : 67.0         Tolerance       cm3/1000 strokes : + 1.0         CRT ZERO POSITION       check tolerance         Rack travel in mm : 10.80       cm3/1000s. : + 3.0         Tolerance mm : + 0.10       starting FUEL DELIVERY         Pressure hPa : 700       Rated speed rpm : 100         rack travel mm : 11.15       Rated speed rpm : 100         Tolerance mm : + 0.05       Del. quantity         cm3/1000 strokes : 125.0       Tolerance         Pressure hPa : - Tolerance mm : + 0.10       cm3/1000 strokes : + 5.0         MEASUREMENT       cm3/1000s. : + 8.0	COMPENSATOR TEST			: 500
Tolerance cm3/1000 strokes : + 1.0 CRT ZERO POSITION  Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa : 700 Tolerance mm : + 0.05  Rated speed rpm : 100 Del. quantity cm3/1000 strokes : 125.0 Tolerance Pressure hPa : - Tolerance mm : + 0.10  MEASUREMENT			+ Del. quantity + cm3/1000 strokes	: 67.0
CRT ZERO POSITION	SETTING		+ Tolerance	
Rack travel in mm : 10.80 Tolerance mm : + 0.10  Rated speed rpm : 500 Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Rated speed rpm : 500 Pressure hPa :	CRT ZERO POSITION		+ Check tolerance	
Pressure hPa : 700 rack travel mm : 11.15 Tolerance mm : + 0.05  Rated speed rpm : 500 Pressure hPa :			+ cm3/10005.	: +- 3.0
rack travel mm : 11.15  Tolerance mm : + 0.05  Rated speed rpm : 500  Pressure hPa :	Rated speed rpm	: 500	STARTING FUEL DEL	IVERY
Tolerance mm : + 0.05	Pressure hPa rack travel mm	: 700 : 11.15	Rated speed rpm	: 100
Rated speed rpm : 500	Tolerance mm	: +- 0.05	+ Del. quantity	
Tolerance mm : + 0.10	Rated speed rpm	: 500	+ Tolerance	
# cm3/1000s. : +- 8.0	Pressure hPa Tolerance mm	: - : +- 0.10		: +- 5.0
+		2.13		: +- 8.0
nateu speeu (piii . 200 T		. 500	1	
			T	
Pressure hPa : 230 + LOW IDLE rack travel mm : 0.20 +	Pressure hPa	: 230 : 0.20	+ LOW IDLE	
Tolerance mm : + 0.10 Rated speed rpm : 300	Tolerance mm	: + 0.10	Rated speed rpm	: 300
Rack travel in mm: 4.00 Start interlock Tolerance mm: + 0.10	Start interlock		+ Tolerance mm	: 4.00 : + 0.10
Rated speed rpm : > 100 + Del. quantity + cm3/1000 strokes : 12.0	Rated speed rpm	: > 100		: 12.0

C10

Tolerance
cm3/1000 strokes : +- 2.0
Check tolerance
cm3/1000s. : +- 4.5
Spreed
Tolerance
cm3/1000 strokes : 2.0
Check tolerance
cm3/1000s. : 4.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 08.01.98 Test oil : ISO 4113

Combination No. : 0 401 846 370

Injection pump

Pump designation : PE6P110A320RS157 EP type number : 0 411 816 108

Governor

Governer design. : RQV250...550/1150PA1

: 40R

Governer no. : 0 421 813 184

Cust. part No. : 516208005011

Customer—spec. information Customer : STEYR Motor : 7 FA Power KW : 235.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 1.5 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : +- 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

### BASIC SETTING

Del. quantity cm3/1000 strokes : 170.0

Talamana .

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : + 4.0

C12

Spreed					
Tolerance cm3/1000 strokes	:		4.0		
Check tolerance cm3/1000s.	:		8.0	 	
			250		
Rated speed rpm	:		250		
Rack travel in mm Tolerance mm Del. quantity	:	+-	6.50 0.10		
cm3/1000 strokes Tolerance	:		16.0		
cm3/1000 strokes	:	+-	3.0		
Check tolerance cm3/1000s. Spreed	:	+-	5.5		
Tolerance cm3/1000 strokes	:		4.0		
Check tolerance cm3/1000s.	:		7.0		
(B) SETTING OF INJ WITH GOVERNOR	ΙEC	CTIO	N PUMP		
GUIDE SLEEVE POSIT		N(	·	 	-
control lever					

control lever position degree : - 1 Rated speed rpm : 1150

Rack travel in mm : 16.50 Tolerance mm : + 1.30

### FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150 Aneroid pressure hPa 900 Del. quantity

cm3/1000 strokes : 170.0

Tolerance

cm3/1000 strokes : + 1.0 Check tolerance

cm3/1000s. : +- 4.0

Spreed Tolerance

cm3/1000 strokes : 4.0

Check tolerance

cm3/1000s. : 8.0

### CONTROL LEVER

control lever position degree : 66.0 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.20 Rated speed rpm : 1195 Tolerance 1/min : +- 5

rack travel mm : 4.00 Rated speed rpm : 1265 Tolerance 1/min : + 15

#### LOW IDLE

control lever

position degree : 10.0 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 7.90

Testing:

Rated speed rpm : 250 rack travel mm : 6.50 Tolerance mm : + 0.10

rack travel mm : 2.00 Rated speed rpm : 430 Tolerance 1/min : + 30

### ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

Rated speed rpm : 500 Pressure hPa : 900 rack travel mm : 12.25 Tolerance mm : + 0.05

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.75 : +- 0.05
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 300 : 11.00 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 380 : 11.75 : +- 0.05
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Check tolerance cm3/1000s.  STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 133.0 : +- 2.0 : +- 5.0 : 9.0 IVERY : 100 : 215.0
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 15.0 : +- 19.0
LOW IDLE	
Rated speed rpm	: 250
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: 6.50 : + 0.10 : 16.0

Check tolerance cm3/1000s. : +- 5.5 Spreed Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 7.0

End of test specification sheet

Tolerance

cm3/1000 strokes : +- 3.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 21.01.98 : ISO 4113

Combination No. : 0 402 736 842AA

Injection pump

Pump designation : PES6P120A120RS7281 EP type number : 0 412 726 890

Governor

Governer design. : RQV400...1250PA1060

: -1K

Governer no. : 0 421 815 344

Cust. part No. : 3933296

Customer-spec. information Customer : CDC

: 6BTA-A Motor : 119.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 : + 2.0 temp. °C Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter :

3.0

x length mm : 600

### REMARKS

### (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

"NW after s.o.d. : 6.00 Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.35

<b>*</b> .	. 0.05	mužda aliasus
Tolerance mm :	: +- 0.05	guide sleeve travel mm : 3.04
Del. quantity		Tolerance mm : 5.04
cm3/1000 strokes :	: 153.5	Total arce Inni
		Rated speed rpm : 1740
Tolerance		guide sleeve
cm3/1000 strokes :	: <del>+- 1.0                                   </del>	travel mm : 11.50
		Tolerance mm : + 0.50
Check tolerance	+	
cm3/1000s. :	: ← 4.0	FULL LOAD DELIVERY AT FULL LOAD STO
Spreed	<u> </u>	LOTE FOUN DEFINERS WE LOTE FOUN 210
opreed	1	Rated speed rpm : 1250
Tolerance	+	Aneroid pressure
cm3/1000 strokes :	8.0	hPa : 800
	+	Del. quantity
Check tolerance	+	cm3/1000 strokes : 153.5
cm3/1000S. :	12.0	Tolerance
		cm3/1000 strokes : + 1.0
	†	Check tolerance cm3/1000S. : +- 4.0
Rated speed rpm :	420	Spreed : +- 4.0
waten sheen thus :	I	Tolerance
Rack travel in mm :	6.00	cm3/1000 strokes : 8.0
	+ 0.20	Check tolerance
Del. quantity	+	cm3/1000s. : 12.0
cm3/1000 strokes :	15.5	
Tolerance	+	
	+ 3.0 +	CONTROL I SUCO
Check tolerance	†	CONTROL LEVER
	+ 5.0 <del> </del>	control lever
Spreed Tolerance	Ī	position degree : 120.0
cm3/1000 strokes :	4.0	tolerance degree : + 4.0
Check tolerance	1	
cm3/1000s. :	8.0	RATED SPEED
	+	rack travel mm : 12.30
4-1	+	Rated speed rpm : 1325
(B) SETTING OF INJE	CTION PUMP +	Tolerance 1/min : +- 15
WITH GOVERNOR	†	neek trovel on . / 00
	†	rack travel mm : 4.00 Rated speed rpm : 1475
GUIDE SLEEVE TRAVEL	<b>I</b>	Tolerance 1/min : +- 5
ANTAL AFFEAR HUMAER	I	TOCCHUING TAIRLE A
Rated speed rpm :	1313	rack travel mm : 0.50
guide sleeve	+	Tolerance mm : ← 0.50
travel mm :	7.14	Rated speed rpm : 1550
Tolerance mm :	+ 0.15	
	+	
Rated speed rpm :	400	
guide sleeve travel mm :	0.91	LOW IDLE
	+- 0.20	FOM INTE
TO CET GIBLE IIIII	I	
Rated speed rpm :	936	control lever
guide sleeve	1	position degree : 73.0
travel mm :	4.64	tolerance degree : +- 4.0
Tolerance mm :	+ 0.25	
••• • • • • • • • • • • • • • • • •		
Rated speed rpm :	640 +	Control lever difference Grad : 47.0

tolerance degree : +	- 6.0 -	<u> </u>	
Setting point w/out bu	umper spring -	Start interlock	
Rated speed rpm :	400	Rated speed rpm Rated speed rpm	: > 100 : < 280
CRT mm min. :>	5.80	Check	
Testing:	-	speed 1/min Check	: > 80
Rated speed rpm : rack travel mm : Tolerance mm : +-	420 - 6.00 - - 0.20 -	speed 1/min	: < 290
Rated speed rpm :	-	FUEL DELIVERY CHA	RACTERISTICS
		Aneroid pressure	200
TORQUE CONTROL	-	hPa	: 800
Rated speed rpm :	1250	Rated speed rpm	: 800
rack travel mm :	13.35	Del. quantity	
Tolerance mm : +-	- 0.05	cm3/1000 strokes	: 133.0
	٦	Tolerance	
Rated speed rpm :	800	cm3/1000 strokes	: <del>+-</del> 3.0
Rated speed rpm : rack travel mm : Tolerance mm : +-	12.00	Check tolerance cm3/1000s.	
Tolerance mm : +-	- 0.20 -	- cm3/1000s.	: <del>+-</del> 6.0
	· ·	Spreed	
Rated speed rpm :	500	Tolerance	
rack travel mm :	11.60	cm3/1000 strokes	: 8.0
Tolerance mm : +	- 0.20	Check tolerance	
	-	cm3/1000s.	: 12.0
Rated speed rpm :	900 -		
rack travel mm :	12.40		· · · · · · · · · · · · · · · · · · ·
Rated speed rpm : rack travel mm : Tolerance mm : +	- 0.20	rack travel mm	: 11.60
		Tolerance mm	
<del></del>		-	
ANEROID/ALTITUDE COMPENSATOR TEST	-	Aneroid pressure	<del></del>
	4	h Pa	: -
	+	Rated speed rpm	: 1250
SETTING	1	- Del. quantity	
	1	cm3/1000 strokes	: 84.0
	1250	- Tolerance	
Pressure hPa :	1200	cm3/1000 strokes	: <del>+-</del> 2.0
	1	- Check tolerance	
	1250	- cm3/1000s.	: ← 4.0
Pressure hPa :	<del>-</del>	<del>-</del>	
rack travel mm :	9.15	<b>-</b> -	
Tolerance mm : +-	· 0.20		
	<del>-{</del>	STARTING FUEL DEL	IVERY
MEASUREMENT	+	-	400
	1	- Rated speed rpm	: 100
Rated speed rpm :	1250	rack travel mm	
	+	- Tolerance mm	: +- 0.50
	310	- Del. quantity	
	12.30	- cm3/1000 strokes	: 155.0
Tolerance mm : +-	· 0.30	- Tolerance	
	+	- cm3/1000 strokes	: +- 20.0
Pressure hPa :	175	- Check tolerance	
	10.20	- cm3/1000s.	: +- 25.0
	0.20	<u>.</u>	•

# LOW IDLE

Rated speed rpm	:	420
Rack travel in mm Tolerance mm	: : +-	6.00 - 0.20
Del. quantity cm3/1000 strokes Tolerance	:	15.5
cm3/1000 strokes Check tolerance	: +	- 3.0
cm3/1000s. Spreed	: +-	- 5.0
Tolerance cm3/1000 strokes	:	4.0
Check tolerance cm3/1000s.	:	8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.02.98 : ISO 4113

Combination No. : 0 402 736 858

Injection pump

Pump designation : PES6P110A120RS7214 EP type number : 0 412 716 805

Governor

Governer design. : RQV350...1200PA964

: -28K Governer no. : 0 421 815 428

Cust. part No. : 3282464

Customer-spec. information

Customer : CUMMINS

Motor

: 6CTA-A

Power KW

: 156.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 1.5

Overflow quantity

min. l/h : 120 Tolerance l/h : + 10.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm :

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : +-

4,40

: +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : + 1.50

Firing order: : 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300

Tolerance Check

: +- 0.50

tolerance °NW

: +- 0.75

Start of delivery blocking

"NW after s.o.d. : 5.50

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.35 Tolerance mm : +- 0.05	Rated speed rpm : 700 guide sleeve travel mm : 6.10
Del. quantity cm3/1000 strokes : 148.5	Tolerance mm : + 0.20
Tolerance cm3/1000 strokes : + 1.0	+ Rated speed rpm : 1400 + guide sleeve + travel mm : 10.90
Check tolerance cm3/1000s. : +- 4.0	
Spreed	GUIDE SLEEVE POSITION
	+
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1 Rated speed rpm : 1330
Check tolerance cm3/1000s. : 9.0	Rack travel in mm : 16.50 Tolerance mm : + 2.70
	+
Rated speed rpm : 350	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 5.50	Rated speed rpm : 1200
Tolerance mm : ← 0.10	Aneroid pressure
Del. quantity	+ hPa : 1200
cm3/1000 strokes : 30.0	+ Del. quantity
Tolerance	+ cm3/1000 strokes : 148.5
cm3/1000 strokes : +- 3.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 5.0	+ Check tolerance
Spreed	- cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes : 8.0	+ Spreed + Tolerance
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	- Check tolerance
110000	+ cm3/1000s. : 9.0
	+
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	
	+ CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever
SOTAL OFFIAE LUVAFF	position degree : 64.0
Rated speed rpm : 1200 guide sleeve	tolerance degree : + 4.0
travel mm : 9.10	+ control lever
Tolerance mm : + 0.10	+ position degree : 119.0
770	tolerance degree : +- 4.0
Rated speed rpm : 350	DATED ODEED
guide sleeve travel mm : 1.80	+ RATED SPEED + rack travel mm : 11.30
Tolerance mm : + 0.20	+ Rated speed rpm : 1245
TOTAL THE U.LU	Tolerance 1/min : +- 5
Rated speed rpm : 450	+
guide sleeve	rack travel mm : 4.00
travel mm : 3.30	Rated speed rpm : 1385
Tolerance mm : +- 0.20	+ Tolerance 1/min : +- 15

rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1500	Pressure hPa : - rack travel mm : 7.90 Tolerance mm : +- 0.20  MEASUREMENT  Rated speed rpm : 1200
LOW IDLE	- + Pressure hPa : 575
	rack travel mm : 11.40 Tolerance mm : +- 0.20
control lever	725
position degree : 65.0 tolerance degree : + 4.0	+ Pressure hPa : 225 + rack travel mm : 8.95 + Tolerance mm : + 0.05
control lever	+
position degree : 15.0 tolerance degree : +- 4.0	Start interlock
Setting point w/out bumper spring	Rated speed rpm : > 100
	Rated speed rpm : < 290
Rated speed rpm : 275	+ Check
CRT mm min. : > 7.20	+ speed 1/min : > 80
	+ Check
Testing:	speed 1/min : < 300
Rated speed rpm : 350	+
rack travel mm : 5.50	+ FUEL DELIVERY CHARACTERISTICS
Tolerance mm : + 0.10	†
Rated speed rpm : 423	Aneroid pressure
nated speed (pill ) (25	+ hPa : 1200
	Rated speed rpm : 650
TORQUE CONTROL	+ Del. quantity
Rated speed rpm : 1200	+ cm3/1000 strokes : 154.0
rack travel mm : 12.35 Tolerance mm : +- 0.05	<pre>+ Tolerance + cm3/1000 strokes : ← 3.0</pre>
roce; ance min	+ Check tolerance
Rated speed rpm : 65/3	+  cm3/1000s. : + 6.0
rack travel mm : 11.10	+ Spreed
Folerance mm : +- 0.20	+ Tolerance
Poted speed spm · 550	+ cm3/1000 strokes : 8.0 + Check tolerance
Rated speed rpm : 550 rack travel mm : 11.00	- cm3/1000s. : 12.0
rack travel mm : 11.00 Folerance mm : +- 0.20	+
	11 00
ANEROID/ALTITUDE	+ rack travel mm : 11.00 + Tolerance mm : +- 0.20
COMPENSATOR TEST	Toterance min . 7- 0.20
	+
CETTING	+ Aneroid pressure
SETTING	+ hPa : - + Rated speed rpm : 500
Rated speed rpm : 1200	Del. quantity
Pressure hPa : 1200	cm3/1000 strokes : 91.5
rack travel mm : 12.35	Tolerance
Tolerance mm : +- 0.05	- cm3/1000 strokes : +- 2.0
Rated speed rpm : 1200	+ Check tolerance + cm3/1000s. : +- 4.0
Nateu Specu (DN) . (400	T 000/10003. T 4.0

C21

# STARTING FUEL DELIVERY

Set starting CRT at K-cam.

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : + 0.50
Del. quantity
cm3/1000 strokes : 155.0
Tolerance
cm3/1000 strokes : + 20.0
Check tolerance
cm3/1000s. : + 25.0

# LOW IDLE

Rated speed rpm : 350 5.50 Rack travel in mm : Tolerance mm : **←** 0.10 Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +- 3.0Check tolerance cm3/1000s. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 11.02.98 Test oil : ISO 4113

Combination No. : 0 401 816 706

Injection pump

Pump designation : PE6P120A300RS3075 EP type number : 0 411 826 719

Governor

Governer design. : Governer no.

Cust. part No. : 846681 PO2 v.11.81

Customer-spec. information : PENTA Customer Motor : TD120FG

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

: 1 417 413 025 Overflow valve

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 Tolerance bar

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter : 1.5 x length mm : 1000

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +-1.0

Prestroke mm : 2.65 : + 0.05 Tolerance mm Check tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasina

: -300

: +- 0.50 Tolerance

Check

: +- 0.75 tolerance °NW

Start of delivery mark

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.90 : + 0.10Tolerance mm

Del. quantity

cm3/1000 strokes : 244.0

Tolerance cm3/1000 strokes	· +- 10
Check tolerance cm3/1000S.	: +- 4.0
Spreed	
Tolerance cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.	: 9.0
Rated speed rpm	: 650
Del. cuantity cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: <del></del> 2.0
Check tolerance cm3/1000s.	: +- 5.0
Spreed Tolerance	
cm3/1000 strokes	: 5.0
Check tolerance cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR	: 8.0 DECTION PUMP
cm3/1000S.	
cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR	
cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER Rated speed rpm	UECTION PUMP
cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa	UECTION PUMP
cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity	Y AT FULL LOAD STOP  : 700  : -
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance	Y AT FULL LOAD STOP  : 700  : -  : 244.0
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	Y AT FULL LOAD STOP  : 700  : -  : 244.0
cm3/1000S.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	EY AT FULL LOAD STOP  : 700  : -  : 244.0
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	Y AT FULL LOAD STOP : 700 : - : 244.0 : +- 1.0 : +- 4.0
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	Y AT FULL LOAD STOP  : 700  : -  : 244.0  : + 1.0
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	Y AT FULL LOAD STOP : 700 : - : 244.0 : +- 1.0 : +- 4.0
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	Y AT FULL LOAD STOP  : 700  : -  : 244.0  : +- 1.0  : +- 4.0  : 5.0  : 9.0
cm3/1000s.  (B) SETTING OF IN WITH GOVERNOR  FULL LOAD DELIVER  Rated speed rpm Aneroid pressure hPa Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	Y AT FULL LOAD STOP  : 700  : - : 244.0 : +- 1.0 : +- 4.0 : 5.0

LOW IDLE	
Rated speed rpm	: 650
Del. quantity cm3/1000 strokes	: 25.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: <del>+-</del> 5.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 5.0
cm3/1000s.	: 8.0
	<del></del>

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 20.02.98 : ISO 4113

Combination No. : 0 400 466 090

Injection pump

Pump designation : PES6A75D410/3RS1326

EP type number : 0 410 476 977

Governor

Governer design. : RSV325...1400A8C495L

Governer no. : 0 420 232 302

Cust. part No. :

Customer—spec. information

Customer : KHD

Motor

: F6L912

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 1 419 992 198

Inlet press. bar : 1.0

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

: 173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0

C25

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.95 Tolerance mm : +- 0.05

Check

tolerance mm

: **←** 0.10

Rack travel in mm : 10.50

Firing order

Tolerance mm :  $\leftarrow$  1.50

: 1-5-3-6-2-: 4

Phasing

: 0-60-120-180-240

: -300 : **←** 0.50

Tolerance Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm: 10.25

Tolerance mm

: **←** 0.05

Del. quantity

cm3/1000 strokes :

44.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  0.5

Check tolerance

cm3/1000s.

: +- 2.0

Spreed

Tolerance

cm3/1000 strokes : 2.0

Check tolerance + cm3/1000S. : 3.5 +	CONTROL LEVER
tilis/16063 3.5	CONTROL LEVER
	control lever
+	position degree : 118.0
Rated speed rpm : 325	tolerance degree : +- 4.0
Rack travel in mm: 8.50	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 9.20
Del. quantity	Rated speed rpm : 1445
cm3/1000 strokes : 11.0	Tolerance 1/min : +- 5
Tolerance	1 4 / 00
cm3/1000 strokes : + 3.0 + Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1485
cm3/1000S. : + 4.5	Tolerance 1/min : +- 15
Spreed	
Tolerance	rack travel mm : 1.00
cm3/1000 strokes : 2.0	Tolerance mm : + 0.70
Check tolerance cm3/1000S. : 3.0	Rated speed rpm : 1675
T 3.0	rack travel mm : 4.00
<del> </del>	Rated speed rpm : 1550
(B) SETTING OF INJECTION PUMP	Tolerance 1/min : +- 15
WITH GOVERNOR	
1	
GUIDE SLEEVE POSITION	LOW IDLE
+	
control lever	control lever
position degree : -3	position degree : 71.0
Rated speed rpm : 800	tolerance degree : + 4.0
+	•
Rack travel in mm: 0.65	Setting point w/out bumper spring
Tolerance mm : + 0.35	Rated speed rpm : 325
governor spring	Rated speed rpm : 325 rack travel mm : 9.00
pre-tension +	Tolerance mm : + 0.10
click setting x : 5.75	
+	Rated speed rpm : 100
ELILL LOAD DELTHEDY AT ELILL LOAD STOD	CRT mm min. : > 19.00
FULL LOAD DELIVERY AT FULL LOAD STOP	CRI 1010 10171
Rated speed rpm : 1400	Testing:
Aneroid pressure +	-
hPa : - +	Rated speed rpm : 325
Del. quantity + cm3/1000 strokes : 44.0 +	rack travel mm : 8.50 Tolerance mm : +- 0.10
cm3/1000 strokes : 44.0 +	Tolerance mm : +- 0.10
cm3/1000 strokes : + 0.5	rack travel mm : 2.00
Check tolerance	Rated speed rpm : 680
cm3/1000s. : +- 2.0 +	Tolerance 1/min : + 30
Spreed +	
Tolerance + cm3/1000 strokes : 2.0 +	TORQUE CONTROL
Check tolerance	
	Rated Speed (Dill : 1400
cm3/1000s. : 3.5	Rated speed rpm : 1400 rack travel mm : 10.25 Tolerance mm : +- 0.05

Rated speed rpm : 500 rack travel mm : 11.55 Tolerance mm : + 0.05

Rated speed rpm : 955 rack travel mm : 10.90 Tolerance mm : + 0.10

# FUEL DELIVERY CHARACTERISTICS

rack travel mm : 10.90 Tolerance mm : + 0.10

# STARTING FUEL DELIVERY

Rated speed rpm : 100

# LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.50 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 11.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 2.0

Check tolerance

cm3/1000s. : 3.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 29.04.97 : ISO 4113

Combination No. : E 040 090 300

Injection pump

Pump designation : PES4A95D410RS2837

EP type number

Governor

Governer design. : RQV300...1400AB1065

: -33L

Governer no.

Cust. part No. : 026 074 08 02

Customer-spec. information

Customer

: MB-NFZ

Motor

: OM 364

Power KW

: 65.0

# TEST BENCH REQUIREMENTS

Inlet line : 2.3

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

Tolerance bar

: +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm 3.25 : +- 0.05 Tolerance mm

Check

tolerance mm : **←** 0.10

Rack travel in mm: 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 8.85

: +- 0.05 Tolerance mm

Del. quantity

cm3/1000 strokes : 72.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000S. : +- 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

C28

Check tolerance cm3/1000s.	: 8.0	+ RATED SPEED + rack travel mm : 7.85
7 10003.	. 0.0	Rated speed rpm : 1445
		Tolerance 1/min : +- 5
ated speed rpm	: 300	rack travel mm : 4.00
el. quantity		Rated speed rpm : 1525
m3/1000 strokes	: 12.0	+ Tolerance 1/min : +- 15
folerance m3/1000 strokes	. +- 20	rack travel mm : 0.50
Check tolerance	2.0	+ Tolerance mm : + 0.50
m3/1000s.	: <del>+-</del> 4.5	Rated speed rpm : 1670
preed		+
olerance m3/1000 strokes	: 5.5	İ
heck tolerance	. 5.5	
m3/1000s.	: 9.0	LOW IDLE
		‡
B) SETTING OF IN.	JECTION PUMP	control lever
ITH GOVERNOR		position degree : 66.0
		Setting point w/out bumper sprin
UIDE OFFIE DOOTS	FTON	+ Rated speed rpm : 300
UIDE SLEEVE POSIT	ITON	
		+ rack travel mm : 5.00 + Tolerance mm : +- 0.10
ontrol lever		+
osition degree		+ Rated speed rpm : 100
ated speed rpm	: 1450	+ CRT mm min. : > 6.50
ack travel in mm	: 16.50	T CRI MAI MILLI
olerance mm		
		+ TORQUE CONTROL
III LOAD DELTVED	AT FULL LOAD STOP	+ Rated speed rpm : 1400 + rack travel mm : 8.85
OFF FOWD DEFTACK!	AT FULL LUAD STOP	Tolerance mm : + 0.05
ated speed rpm	: 1400	+
neroid pressure		+ Rated speed rpm : 500
Pa	: -	rack travel mm : 8.90
el. quantity m3/1000 strokes	: 72.0	Tolerance mm : + 0.10
olerance	. 12.0	+
m3/1000 strokes	: + 1.0	
heck tolerance	7.0	+ Start interlock
m3/1000s.	: <b>←</b> 3.0	+ Rated speed rpm : > 100
preed olerance		Rated speed rpm : < 220
m3/1000 strokes	: 3.5	+
heck tolerance		Check
m3/1000s.	: 8.0	+ speed 1/min : > 80
		+ Check + speed 1/min : < 240
ONTROL LEVER		<u> </u>
ONTROL LEVER		FUEL DELIVERY CHARACTERISTICS
ontrol lever		<del>†</del>

Aneroid pressure

hPa : -Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 53.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. :  $\leftarrow$  4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.50 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 83.0

Tolerance

cm3/1000 strokes : +- 7.5

Check tolerance

cm3/1000s. : +- 10.0

# LOW IDLE

Rated speed rpm : 300

Del. quantity

cm3/1000 strokes : 12.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 4.5

Spreed

Tolerance

cm3/1000 strokes : 5.5

Check tolerance

cm3/1000s. : 9.0

# Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98 Test oil : ISO 4113

Combination No. : 0 400 074 779

Injection pump

Pump designation : PES4M55C32ORS187 EP type number : 0 410 054 936

Governor

Governer design. : RSF375/2300M56-10 Governer no. : 0 420 021 130

Cust. part No. :

Customer—spec. information Customer : MB-PKW

Motor : OM601-Abgl. MJ90

Power KW : 53.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 1.75
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Start of delivery blocking

\*NW after s.o.d. : 17.00 Tolerance : + 0.20

Check

tolerance °NW :  $\leftarrow$  0.30

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 12.35 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 33.5

Tolerance cm3/1000 strokes : +- 0.5

Check tolerance cm3/1000s. : +- 1.5

Spreed Tolerance

cm3/1000 strokes : 2.5

Check tolerance 3.0 cm3/1000s. SET IDLE CONTROL LEVER POSITION Rated speed rpm : 375 Rated speed rpm : 900 Rack travel in mm: 6.50 Tolerance mm : + 0.10 CRT mm max. : 1.45 Del. quantity cm3/1000 strokes : 6.5 LOW IDLE Tolerance cm3/1000 strokes :  $\leftarrow$  0.5 Spreed control lever Tolerance cm3/1000 strokes : 1.0 position degree : 14.0 tolerance degree : +- 2.0 (B) SETTING OF INJECTION PUMP Setting point w/out bumper spring WITH GOVERNOR Rated speed rpm : 375 rack travel mm 6.50 IDLE STAGE SET IDLE AUXILIARY SPRING Rated speed rpm : 450 rack travel mm 4.90 Rack travel in mm: 6.50 : +- 0.10 Tolerance mm :  $\leftarrow$  0.10 Tolerance mm 2.50 rack travel mm FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 670 Tolerance 1/min 900 Rated speed rpm : Load pick-up Ref. pressure ALDA / ADA hPa 1100 Del. quantity Rated speed rpm cm3/1000 strokes : 33.5 rack travel mm : > 11.00 Tolerance cm3/1000 strokes : +-0.5 Rated speed rpm : 900 Check tolerance cm3/1000s. : +- 1.5 CRT mm max. : 1.45 Spreed Tolerance rack travel mm : 6.50 2.5 cm3/1000 strokes : Rated speed rpm : 375 Check tolerance cm3/1000s. 3.3 TORQUE CONTROL RATED SPEED : 900 Rated speed rpm rack travel mm 12.35 : + 0.05 control lever Tolerance mm position degree : 50.0 : 1400 Rated speed rpm rack travel mm 12.05 Rated speed rpm : 2500 8.50 : + 0.10rack travel mm Tolerance mm : +- 0.20 Tolerance mm 2300 Rated speed rpm : 2950 rack travel mm 11.40 Rated speed rpm rack travel mm 0.50 Tolerance mm : + 0.10: + - 0.50Tolerance mm ADJUSTMENT TEST ADA/ALDA

# SETTING

SETTING	
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 900 : 950 : -0.10 : +- 0.10
MEASUREMENT	
Rated speed rpm Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 900 : 900 : -0.60 : +- 0.10
Ref. pressure ALDA / ADA hPa rack travel mm Tolerance mm	: 750 : −2.00 : ← 0.20
FUEL DELIVERY CHA	RACTERISTICS
Ref. pressure ALDA / ADA hPa Rated speed rpm Del. quantity	: 1400
cm3/1000 strokes Tolerance	
cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: + 0.8 : + 1.8
Tolerance cm3/1000 strokes Check tolerance	: 2.5
cm3/1000s.	: 3.0
Ref. pressure ALDA / ADA hPa Rated speed rpm Spreed	: 1100 : 2300
Del. quantity cm3/1000 strokes	: 35.0
Tolerance cm3/1000 strokes	: <b>←</b> 1.0
Check tolerance cm3/1000s. Spreed	: + 2.0
Tolerance cm3/1000 strokes	: 2.5
Check tolerance cm3/1000s.	: 3.0

# Rated speed rpm : 100 rack travel mm : 20.10 Del. quantity cm3/1000 strokes : 57.0 Tolerance cm3/1000 strokes : + 4.0 Check tolerance cm3/1000s. : + 5.0 Spreed

# cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 6.0

# LOW IDLE

Tolerance

Rated speed rpm Del. quantity	:	375
cm3/1000 strokes	:	7.8
Check tolerance cm3/1000s. Spreed	: +-	2.3
Check tolerance cm3/1000s.	:	1.5

control lever position degree : > 49.00

control lever position degree : < 45.50

# SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever
position degree : 14.0
tolerance degree : + 2.0

Rated speed rpm : 425

Rack travel in mm : 8.90
Tolerance mm : + 0.80
Del. quantity
cm3/1000 strokes : 18.0

Tolerance

cm3/1000 strokes : +- 3.5

Check tolerance

cm3/1000S. : +- 4.5 Vacuum hPa : 400.0

TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375 Vacuum hPa : 450.0

# Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.03.98 Test oil : ISO 4113

Combination No. : 0 400 074 873

Injection pump

Pump designation : PES4M55C32ORS184 EP type number : 0 410 054 938

Governor

Governer design. : RSF375/2000M87 Governer no. : 0 420 021 290

Cust. part No. :

Customer—spec. information Customer : MB-PKW Motor : 0M601-2.3L

Power KW : 60.0

# TEST BENCH REQUIREMENTS

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 469 990 351

Inlet press. bar : 1.0

Test nozzle holde

assembly : 1 688 901 111

Opening pressure

bar : 148.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant. per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.05
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 21.00 Tolerance mm : + 1.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270 : 0.80

1.00

# Start of delivery blocking

\*NW after s.o.d. : 16.50 Tolerance : +- 0.20

Check

tolerance °NW : + 0.30

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 12.70 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 40.5

Tolerance cm3/1000 strokes : + 0.5

Check tolerance

cm3/1000s. : +- 1.5

Spreed

Tolerance cm3/1000 strokes : 2.5	† Toleran
Check tolerance cm3/1000s. : 3.0	SET IDL
Rated speed rpm : 375	Rated s
	+ CRT mm i
Rack travel in mm : 4.70 Tolerance mm : + 0.10 Del. quantity	LOW IDL
cm3/1000 strokes : 6.5 Tolerance	1
cm3/1000 strokes : + 0.5 Spreed	control position
Tolerance	toleran
cm3/1000 strokes : 1.0	+ Setting
	+ Rated s
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack tra
MILLI GOACIGADIC	SET IDLE
IDLE STAGE	Rated sp
	+ rack tra
Dock through in mr. 4 25	+ Tolerand
Rack travel in mm : 6.25 Tolerance mm : +- 0.25	Load pie
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Rated sp
Rated speed rpm : 1000	+ Rated s
Ref. pressure	- Mared Si
ALDA / ADA hPa : 1100	+ CRT mm r
Del. quantity cm3/1000 strokes : 40.5	rack tra
Tolerance	+ Rated sp
cm3/1000 strokes : +- 0.5 Check tolerance	İ
cm3/1000s. : + 1.5	Į
Spreed	+ TORQUE (
Tolerance cm3/1000 strokes : 2.5	Rated sp
Check tolerance	+ rack tra
cm3/1000s. : 3.0	† Tolerand
	Rated sp
RATED SPEED	+ rack tra
central layer	t Dottod
control lever position degree : 50.0	+ Rated sp + rack tra + Tolerand
Rated speed rpm : 2200	+ Coceran
rack travel mm : 8.80	+
Tolerance mm : + 0.25	+ ADJUSTME
Rated speed rpm : 2500 rack travel mm : 0.50	SETTING

Tolerance mm : +- 0.50
SET IDLE CONTROL LEVER POSITION
Rated speed rpm : 1000
CRT mm max. : 1.45
LOW IDLE
control lever position degree : 11.0 tolerance degree : + 2.0
Setting point w/out bumper spring Rated speed rpm : 375 rack travel mm : 4.70
SET IDLE AUXILIARY SPRING
Rated speed rpm : 450 rack travel mm : 3.40 Tolerance mm : + 0.10
Load pick-up
Rated speed rpm : 250 rack travel mm : 11.70
Rated speed rpm : 1000
CRT mm max. : 1.45
rack travel mm : 4.70 Rated speed rpm : 375
TORQUE CONTROL
Rated speed rpm : 1000 rack travel mm : 12.70 Tolerance mm : +- 0.05
Rated speed rpm : 1550 rack travel mm : 12.40 Tolerance mm : + 0.10
Rated speed rpm : 1950 rack travel mm : 12.00 Tolerance mm : + 0.10
ADJUSTMENT TEST ADA/ALDA

Rated speed rpm	: 1000	+ Rated speed rpm : 2200
D-6		rack travel mm : 8.80
ALDA / ADA hPa	· 940	⊥ Tolerance mm · + ∩ 25
rack travel mm	: 940 : -0.10	Del. quantity
Tolerance mm	: + 0.10	Del. quantity cm3/1000 strokes : 30.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +- 3.0 Spreed Tolerance cm3/1000 strokes : 2.5 Check tolerance cm3/1000s. : 3.0
roterance min	. 1- 0.10	Tolerance
115 1 01 10 51151 57		7 (1000 - tt 1 2 0
MEASUREMENT		cm3/1000 strokes : +- 2.0
_	4000	+ Check tolerance
Rated speed rpm	: 1000	+ cm3/1000s. : $+$ 3.0
Ref. pressure		Spreed
ALDA / ADA hPa	: 900	+ Tolerance
rack travel mm	: -0.40	+ cm3/1000 strokes : 2.5
Tolerance mm	: +- 0.10	+ Check tolerance
		+ cm3/1000s. : 3.0
Ref. pressure		+
ALDA / ADA hPa	: 750	
rack travel mm	: -1.50	+ STARTING FUEL DELIVERY
Tolerance mm		
TO CET ON ICE TIME	0.20	Rated speed rpm : 100
		rack travel mm : 21.60
Piges API Transcration	ADARTEDIATION	+ Tolerance mm : +- 1.50
FUEL DELIVERY CHA	ARACTERISTICS	+ Del. quantity
		+ cm3/1000 strokes : 59.8
Ref. pressure		† Tolerance
ALDA / ADA hPa		+ cm3/1000 strokes : $+$ 4.0
Rated speed rpm	: 1550	+ Check tolerance
Del. quantity		+ cm3/1000s. : +- 5.0
cm3/1000 strokes	: 40.8	+ Spreed
Tolerance		+ Tolerance
cm3/1000 strokes	· +- 0.8	+ cm3/1000 strokes : 6.0
Check tolerance	0.0	Check tolerance
cm3/1000s.	: +- 1.8	cm3/1000s. : 6.0
	: +- 1.0	† tilis/10005 0.0
Spreed		Ť
Tolerance	0.5	†
cm3/1000 strokes	: 2.5	†
Check tolerance		
cm3/1000s.	: 3.0	+ LOW IDLE
		+
Ref. pressure		+ Rated speed rpm : 375
ALDA / ADA hPa	: 1100	+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 7.8
Spreed		+ Check tolerance
Del. quantity		+ cm3/1000s. : +- 2.3
cm3/1000 strokes	: 41.5	Spreed
Tolerance	. 71.3	Check tolerance
	40	+ cm3/1000s. : 1.5
cm3/1000 strokes	: <del></del> 1.0	T (1113/10003. : 1.3
Check tolerance		†
cm3/1000s.	: +- 2.0	†
Spreed		
Tolerance		†
cm3/1000 strokes	: 2.5	†
Check tolerance		+
cm3/1000s.	: 3.5	+ control lever
		position degree : > 45.00
		+
HIGH IDLE		+ control lever
TAUL SPEE		position degree : < 41.50
Paf practing		T position degree 41.30
Ref. pressure	. 4400	T
ALDA / ADA hPa	: 1100	†

# SETTING PNEUMATIC FAST IDLE (PLA) (PLA) POSITION

control lever

position degree : 11.0 tolerance degree : + 2.0

Rated speed rpm : 425

Rack travel in mm: 7.00 Toterance mm : + 0.80

Del. quantity

cm3/1000 strokes : 15.0

Tolerance

cm3/1000 strokes : +- 3.5

Check tolerance cm3/1000s. : + 4.5 Vacuum hPa : 400.0

# TESTING PNEUMATIC SHUTOFF DEVICE

Rated speed rpm : 375 Vacuum hPa : -450.0

# Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.11.93 Test oil : ISO 4113

Combination No. : 0 402 646 916X

Injection pump

Pump designation : PE6P120A320LS7836

: -10

EP type number : 0 412 626 854

Governor

Governer design. : RQV300...1050PA797

: -17

Governer no. : 0 421 813 884

Cust. part No. : 0200740302

Customer—spec. information Customer : MB—NFZ Motor : OM401 LA Power KW : 200.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : +- 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 20.50

Tolerance mm : 20.50

Firing order : 6-3-5-2-4-

: 7

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 6

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20 Tolerance mm : + 0.05

D11

	+ guide sleeve
Del. quantity	+ travel mm : 4.64
cm3/1000 strokes : 202.5	+ Tolerance mm : +- 0.25
	+
Tolerance	+ Rated speed rpm : 637
cm3/1000 strokes : +- 1.0	guide sleeve travel mm : 5.18
Check tolerance	+ Tolerance mm : + 0.25
cm3/1000s. : +- 4.0	Total dice min
CIII.57 (10000),	Rated speed rpm : 830
Spreed	+ guide sleeve
·	† travel mm : 6.23
Tolerance	† Tolerance mm : + 0.25
cm3/1000 strokes : 5.0	†
Charle had annua	Rated speed rpm : 1218
Check tolerance cm3/1000S. : 9.0	+ guide sleeve + travel mm : 10.00
CIID7 (0003 9.0	Tolerance mm : + 0.25
	Total and man
	Rated speed rpm : 1330
Rated speed rpm : 300	+ guide sleeve
	+ travel mm : 11.50
Rack travel in mm: 5.60	+ Tolerance mm : + 0.50
Tolerance mm : +- 0.10	†
Del. quantity cm3/1000 strokes : 19.0	GUIDE SLEEVE POSITION
Tolerance	1
cm3/1000 strokes : +- 3.0	1
Check tolerance	+ control lever
cm3/1000s. : +- 6.0	+ position degree : -1
Spreed	+ Rated speed rpm : 1125
Tolerance cm3/1000 strokes : 6.0	+ Rack travel in mm : 16.20
CMS/(UUU Strokes : 0.U	
Check tolerance	⊥ Tolerance mm : + 1 30
Check tolerance	Tolerance mm : + 1.30
Check tolerance cm3/1000s. : 10.0	+ Tolerance mm : + 1.30
cm3/1000s. : 10.0	Tolerance mm : + 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP
cm3/1000s. : 10.0	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050
cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure
cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400
cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure
cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : +- 0.20  Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed
Cm3/1000S. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : +- 0.20  Rated speed rpm : 300 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15  Rated speed rpm : 1800	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15  Rated speed rpm : 1800 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15  Rated speed rpm : 1800 guide sleeve travel mm : 24.23	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15  Rated speed rpm : 1800 guide sleeve	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15  Rated speed rpm : 1800 guide sleeve travel mm : 24.23	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER
Cm3/1000s. : 10.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1107 guide sleeve travel mm : 8.48 Tolerance mm : + 0.20  Rated speed rpm : 300 guide sleeve travel mm : 1.26 Tolerance mm : + 0.15  Rated speed rpm : 1800 guide sleeve travel mm : 24.23 Tolerance mm : + 0.25	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050 Aneroid pressure hPa : 1400 Del. quantity cm3/1000 strokes : 202.5 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000 strokes : 9.0  CONTROL LEVER control lever

RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 12.20 : 1095 : +- 5
rack travel mm Rated speed rpm Tolerance 1/min	: 4.00 : 1210 : +- 15
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : ← 0.50 : 1300
LOW IDLE	
control lever position degree tolerance degree	: 84.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 7.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.60 : +- 0.10
Rated speed rpm	: 400
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 13.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 13.20 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 13.20 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	

Pressure hPa rack travel mm Tolerance mm	: 1400 : 13.20 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 400 : - : 10.25 : +- 0.15
MEASUREMENT	
Pressure hPa Rated speed rpm rack travel mm Tolerance mm	: – : 500 : 10.25 : +– 0.15
Rated speed rpm	: 400
Pressure hPa Tolerance mm	: 200 : + 0.10
Pressure hPa Tolerance mm	: 350 : ← 0.05
Start interlock	<del></del>
Rated speed rpm Rated speed rpm	: > 100 : < 240
Check speed 1/min Check	: > 80
speed 1/min	: < 260
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 1400 : 800
Del. quantity cm3/1000 strokes	: 204.0
Tolerance cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0

Rated speed rpm : 400

Aneroid pressure

350 hPa Rated speed rpm 400

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes :  $\leftarrow$ 1.5

Check tolerance

cm3/1000s. 4.5

Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

1.0 cm3/1000 strokes

Check tolerance

cm3/1000S. 4.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. 12.0

# STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0

Check tolerance

cm3/1000s. : + - 14.0

# LOW IDLE

300 Rated speed rpm

5.60 Rack travel in mm :

Tolerance mm 0.10

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes 3.0

Check tolerance

cm3/1000s. 6.0 : +-

Spreed

Tolerance

cm3/1000 strokes 6.0

Check tolerance

cm3/1000s. 10.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.09.93 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 921X

Injection pump

Pump designation : PE6P120A320LS7837

: -10

EP type number : 0 412 626 855

Governor

Governer design. : RQ300/1050PA972-3

: 0 421 801 565 Governer no.

Cust. part No. : 0200741202

Customer-spec. information Customer : MB-NFZ : 0M441 LA Motor Power KW : 250.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : ← 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 6-3-5-2-4-

: 1-

Phasing : 0-60-120-180-240

: -300-360

Tolerance : +- 0.30

Check

: **←** 0.75 tolerance °NW

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Del. quantity

cm3/1000 strokes : 245.0

Tolerance

cm3/1000 strokes : +- 1.0

D15

Check tolerance cm3/1000s. : +-	4.0	Check tolerance cm3/1000s.	: 9.0
Tolerance cm3/1000 strokes :	5.0	CONTROL LEVER	<del></del>
Check tolerance cm3/1000s. :	9.0	control lever position degree tolerance degree	
Rated speed rpm :	+	RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min	: 1098
Rack travel in mm : Tolerance mm : +- Del. quantity cm3/1000 strokes : Tolerance	0.10	rack travel mm Rated speed rpm Tolerance 1/min	
cm3/1000 strokes : +- Check tolerance cm3/1000s. : +- Spreed	+	rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.75
Tolerance cm3/1000 strokes : Check tolerance	+		
cm3/1000s. :	10.0	LOW IDLE	
(B) SETTING OF INJECTION WITH GOVERNOR	ON PUMP	control lever position degree tolerance degree	
GUIDE SLEEVE POSITION	+	Setting point w/ou Rated speed rpm	, , ,
control lever position degree : Rated speed rpm :	109	CRT mm min. Testing:	: > 7.70
Rack travel in mm : Tolerance mm : +-		Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.90 : + 0.10
FULL LOAD DELIVERY AT I	FULL LOAD STOP	rack travel mm Rated speed rpm	: 2.00 : 400
Rated speed rpm : Aneroid pressure hPa :	600	Tolerance 1/min	: +- 20
Del. quantity cm3/1000 strokes : Tolerance	+	TORQUE CONTROL Rated speed rpm	: 1050
cm3/1000 strokes : +- Check tolerance cm3/1000s. : +- Spreed	+	rack travel mm Tolerance mm	: 14.90
Tolerance cm3/1000 strokes :	5.0		

ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 600 : 1200 : 15.05 : + 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 9.05 : ← 0.15
MEASUREMENT	
Rated speed rpm	: 600
Pressure hPa rack travel mm Tolerance mm	: 150 : 9.70 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 550 : 13.45 : + 0.05
FUEL DELIVERY CHA Aneroid pressure	
hPa Rated speed rpm	: 1200 : 1050
Del. quantity cm3/1000 strokes Tolerance	: 236.0
cm3/1000 strokes Check tolerance	: + 2.0
cm3/1000s. Spreed	: <del>←</del> 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	
	: 12.0
Aneroid pressure	: 12.0
hPa	: 12.0 : 550 : 400
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 550
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 550 : 400
nPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	: 550 : 400 : 204.5

<del></del>		
Aneroid pressure hPa	:	-
Rated speed rpm Del. quantity	:	500
cm3/1000 strokes Tolerance	:	133.0
cm3/1000 strokes Check tolerance	: +	- 1.0
cm3/1000s.	; +	- 4.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0
STARTING FUEL DEL	IVER	Y

STARTING TOLL DEL	T 4 1		
Rated speed rpm	:		100
rack travel mm	:		9.10
Tolerance mm	:	+-	0.20
Del. quantity			
cm3/1000 strokes	:		75.0
Tolerance			
cm3/1000 strokes	:	+-	15.0
Check tolerance			
cm3/1000s.	:	+-	19.0

LOW IDLE			
Rated speed rpm	:	300	
Rack travel in mm Tolerance mm Del. quantity	: +-	5.90 0.10	
Tolerance	:	19.0	
cm3/1000 strokes Check tolerance	: +-	3.0 6.0	
cm3/1000s. Spreed Tolerance		0.0	
cm3/1000 strokes Check tolerance	:	6.0	
cm3/1000s.	:	10.0	

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.11.93 : ISO 4113 Test oil

Combination No. : 0 402 646 959X

Injection pump

Pump designation : PE6P120A320LS7836

: -10

: 0 412 626 854 EP type number

Governor

Governer design. : RQ300/1050PA993-6 : 0 421 801 616 Governer no.

Cust. part No. : 0210740402

Customer-spec. information Customer : MB-NFZ Motor : 0M401 LA : 200.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x Length mm : 1000

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

rest pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05 Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

: 6-3-5-2-4-: 1 Firing order

: 0-60-120-180-240 Phasing

: -300

: +- 0.30 Tolerance

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Barrel no. : 6

# BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.20

Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 202.5	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000S. : +- 4.0 Spreed Tolerance
Check tolerance cm3/1000S. : +- 4.0	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Spreed	Cm3/10005. : 9.0
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	<pre>control lever position degree : 98.0 tolerance degree : +- 4.0</pre>
Rated speed rpm : 300	RATED SPEED rack travel mm : 12.20 Rated speed rpm : 1098
Rack travel in mm : 5.60 Tolerance mm : + 0.10	Tolerance 1/min : +- 8
Del. quantity cm3/1000 strokes : 19.0 Tolerance	rack travel mm : 4.00 Rated speed rpm : 1190 Tolerance 1/min : +- 15
cm3/1000 strokes : +- 3.0 +- Check tolerance cm3/1000s. : +- 6.0 +- 6.0	rack travel mm : 0.75 Tolerance mm : + 0.75
Spreed + Tolerance + cm3/1000 strokes : 6.0 +	Rated speed rpm : 1300
Check tolerance cm3/1000s. : 10.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 74.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
control lever + position degree : 109 + Rated speed rpm : 600 +	Rated speed rpm : 200 CRT mm min. :> 7.50
Rack travel in mm: 20.00	Testing:
Tolerance mm : + 0.80	Rated speed rpm : 300 rack travel mm : 5.60 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 1050 Aneroid pressure hPa : 1400	Rated speed rpm : 400 Tolerance 1/min : +- 20
Del. quantity cm3/1000 strokes : 202.5	TORQUE CONTROL Rated speed rpm : 1050

rack travel mm Tolerance mm		+ ƙated speed rpm : 800 + bel. quantity
Rated speed rpm		cm3/1000 strokes : 204.0
rack travel mm Tolerance mm	: 13.20	cm3/1000 strokes : +- 2.0 Check tolerance
		+ cm3/1000s. : +- 5.0
Rated speed rpm rack travel mm Tolerance mm	: 13.20	- Spreed - Tolerance
Tolerance mm	: +- 0.05	+ cm3/1000 strokes : 8.0 + Check tolerance
ANEROID/ALTITUDE		
COMPENSATOR TEST		nack travel mm · 13 20
		rack travel mm : 13.20 Tolerance mm : +- 0.05
SETTING		<del></del>
Rated speed rpm Pressure hPa	: 400 : 1400	Aneroid pressure hPa : 350
rack travel mm	: 13.20	+ Rated speed rpm : 400
Tolerance mm	: <del></del> 0.05	+ Del. quantity + cm3/1000 strokes : 150.0
Rated speed rpm Pressure hPa	: 400	Tolerance cm3/1000 strokes : +- 1.5
rack travel mm	: 10.25	† Check tolerance
Tolerance mm	: +- 0.15	+ cm3/1000s. : +- 4.5
MEASUREMENT		Approvid procesure
Pressure hPa	: -	+ Aneroid pressure + hPa : -
Rated speed rpm rack travel mm	: 500 · 10 25	Rated speed rpm : 500 Del. quantity
Tolerance mm		+ cm3/1000 strokes : 130.0
Rated speed rpm	: 400	+ Tolerance + cm3/1000 strokes : +- 1.0
Pressure hPa	. 200	+ Check tolerance + cm3/1000s. : +- 4.0
Tolerance mm		Spreed
Pressure hPa	: 350	+ Tolerance + cm3/1000 strokes : 8.0
Tolerance mm	: +- 0.05	+ Check tolerance + cm3/1000s. : 12.0
Start interlock		
	: > 100	STARTING FUEL DELIVERY
Rated speed rpm Rated speed rpm		+
Check		+ Rated speed rpm : 100 + Del. quantity
speed 1/min	: > 80	cm3/1000 strokes : 210.0 Tolerance
Check speed 1/min	: < 240	+ cm3/1000 strokes : +- 10.0
		+ Check tolerance + cm3/1000S. : +- 14.0
FUEL DELIVERY CHA	ARACTERISTICS	‡
Aneroid pressure		<u> </u>
hPa	: 1400	+ LOW IDLE

Rated speed rpm	:	300
Rack travel in mm Tolerance mm	: +-	5.60 0.10
Del. quantity cm3/1000 strokes Tolerance	•	19.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	6.0
cm3/1000s.	•	10.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.11.93 Test oil : ISO 4113

Combination No. : 0 402 646 960X

Injection pump

Pump designation : PE6P120A320LS7836

: -10

EP type number : 0 412 626 854

Governor

Governer design. : RQ300/950PA993-7 Governer no. : 0 421 801 617

Cust. part No. : 0210740702

Customer—spec. information
Customer : MB—NFZ
Motor : 0M401 LA
Power KW : 200.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance 'ar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Tolerance mm : +- U.5U

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 950

47.00

Rack travel in mm : 13.20 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 204.5	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000S. : +- 4.0 Spreed Tolerance
Check tolerance cm3/1000s. : + 4.0	cm3/1000 strokes : 5.0 Check tolerance
Spreed	cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	control lever position degree : 96.0 tolerance degree : + 4.0
Rated speed rpm : 300	RATED SPEED rack travel mm : 12.20 Rated speed rpm : 998
Rack travel in mm: 5.60 Tolerance mm: + 0.10 Del. quantity	Tolerance 1/min : +- 8 rack travel mm : 4.00
<pre>cm3/1000 strokes : 19.0</pre>	Rated speed rpm : 1080 Tolerance 1/min : +- 15
Check tolerance cm3/1000s. : + 6.0 + Spreed	rack travel mm : 0.75 Tolerance mm : +- 0.75 Rated speed rpm : 1200
Tolerance cm3/1000 strokes : 6.0 - Check tolerance	Nates Speed Tpin . T200
cm3/1000s. : 10.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 74.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
control lever	Rated speed rpm : 200
position degree : 109 + Rated speed rpm : 600 +	CRT mm min. : > 7.40
Rack travel in mm: 20.00	Testing:  Rated speed rpm : 300
Totel ance min	rack travel mm : 5.60 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 950	rack travel mm : 2.00 Rated speed rpm : 390
Rated speed rpm : 950 + Aneroid pressure + hPa : 1400 +	Tolerance 1/min : + 20
Del. quantity cm3/1000 strokes : 204.5	TORQUE CONTROL Rated speed rpm : 950

rack travel mm Tolerance mm	: 13.20 : ← 0.05	+ Rated speed rpm : 800 + Del. quantity
Rated speed rpm		cm3/1000 strokes : 204.0 Tolerance
rack travel mm Tolerance mm	: 13.20	cm3/1000 strokes : +- 2.0 Check tolerance
Rated speed rpm		cm3/1000S. : + 5.0 + Spreed
rack travel mm	: 13.20	+ Tolerance
Tolerance mm	: <del>+-</del> 0.05	cm3/1000 strokes : 8.0 Check tolerance
ANEROID/ALTITUDE		
COMPENSATOR TEST		rack travel mm : 13.20
SETTING		Tolerance mm : + 0.05
Rated speed rpm	: 400	Aneroid pressure
Pressure hPa	: 1400	+ hPa : 350
rack travel mm	: 13.20	Rated speed rpm : 400
Tolerance mm  Rated speed rpm		Del. quantity cm3/1000 strokes : 150.0 Tolerance
Pressure hPa	: -	+ cm3/1000 strokes : + 1.5
rack travel mm Tolerance mm		Check tolerance cm3/1000s. : + 4.5
MEASUREMENT		Aneroid pressure
Pressure hPa	: -	+ hPa : -
Rated speed rpm		Rated speed rpm : 500 Del. quantity
rack travel mm Tolerance mm		cm3/1000 strokes : 133.0 Tolerance
Rated speed rpm	: 400	cm3/1000 strokes : +- 1.0 Check tolerance
Pressure hPa	: 200	cm3/1000s. : +- 4.0
Tolerance mm	: <b>←</b> 0.10	+ Spreed + Tolerance
Pressure hPa	: 350	+ cm3/1000 strokes : 8.0
Tolerance mm	: +- 0.05	+ Check tolerance + cm3/1000S. : 12.0
Start interlock		
	. > 400	CTARTAN FUEL DEL TUERY
Rated speed rpm Rated speed rpm	: > 100 : < 220	+ STARTING FUEL DELIVERY
Check		+ Rated speed rpm : 100 + Del. quantity
speed 1/min	: > 80	+ cm3/1000 strokes : 210.0
Check speed 1/min	: < 240	+ Tolerance + cm3/1000 strokes : +- 10.0
		Check tolerance cm3/1000S. : +- 14.0
FUEL DELIVERY CHA	ARACTERISTICS	‡
Aneroid pressure		İ
hPa	: 1400	T LOW IDLE

D24

Rated speed rpm	:		300
Rack travel in mm Tolerance mm Del. quantity	:	+-	5.60 0.10
cm3/1000 strokes	:		19.0
Tolerance cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s.	:	+-	6.0
Spreed Tolerance			
cm3/1000 strokes	:		6.0
Check tolerance cm3/1000s.	:		10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 20.06.97 : ISO 4113

Combination No. : 0 402 648 783

Injection pump

Pump designation : PE8P120A320LS7906-1

EP type number : 0 412 628 925

Governor

Governer design. : RQ750PA1326

Governer no. : 0 421 801 815

Cust. part No. : 04222 3938 KY

Customer-spec. information

Customer : KHD

Motor

: BF8M1015/C

Power KW

: 318.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 200 Tolerance l/h : + 20.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

x length mm : 1000

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 8-7-2-6-5

: - 4- 3- 1

: 0-45-90-135-180 Phasing

: -225-270-315

Tolerance : + 0.50

Check

: +- 0.75 tolerance "NW

# Start of delivery blocking

\*NW after s.o.d. : 315.00 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no.

: 8

### BASIC SETTING

Rated speed rpm : 700

Rack travel in m Tolerance mm		+ guide sleeve + travel mm : 12.00 + Tolerance mm : +- 0.25
Del. quantity cm3/1000 strokes	: 365.0	Rated speed rpm : 930 guide sleeve travel mm : 13.50
Tolerance cm3/1000 strokes	: +- 1.0	Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	: +- 4.0	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 700
Spreed		Aneroid pressure  hPa : -
Tolerance cm3/1000 strokes	: 5.0	Del. quantity cm3/1000 strokes : 365.0 Tolerance
Check tolerance cm3/1000s.	: 9.0	cm3/1000 strokes : +- 1.0 Check tolerance - cm3/1000S. : +- 4.0
		Spreed Tolerance
Rated speed rpm Del. quantity cm3/1000 strokes		+ cm3/1000 strokes : 5.0 + Check tolerance + cm3/1000s. : 9.0
Tolerance cm3/1000 strokes		
Check tolerance cm3/1000s. Spreed	: ← 6.0	CONTROL LEVER
Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 8.0 : 12.0	control lever position degree : 110.0 tolerance degree : +- 4.0
(B) SETTING OF IN	UECTION PUMP	ASSEMBLY GOVERNOR SETTING
WITH GOVERNOR		Rated speed rpm : 750 rack travel mm : 11.60
GUIDE SLEEVE TRAV		Rated speed rpm : 780 Tolerance 1/min : +- 4 rack travel mm : 4.50
guide sleeve travel mm Tolerance mm	: 4.23 : + 0.15	rack travel mm : 0.50 Tolerance mm : + 0.50
Rated speed rpm	: 610	Rated speed rpm : 900
guide sleeve travel mm Tolerance mm	: 0.72 : + 0.25	+ Rated speed rpm : 751 + rack travel mm : 11.60
Rated speed rpm guide sleeve	: 900	Rated speed rpm : 781 Tolerance 1/min : +- 4
travel mm Tolerance mm	: 14.89 : + 0.25	rack travel mm : 4.50
Rated speed rpm	: 862	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50 + Rated speed rpm : 900

Rated speed rpm	: 752
rack travel mm	: 11.60
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4
rack travel mm	: 0.50
Tolerance mm	: +- 0.50
Rated speed rpm	: 900
Rated speed rpm rack travel mm	
Rated speed rpm	: 783
Tolerance 1/min	: +- 4
rack travel mm	: 4.50
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 900
Rated speed rpm	: 754
rack travel mm	: 11.60
Rated speed rpm	: 784
Tolerance 1/min	: +- 4
rack travel mm	: 4.50
rack travel mm	: 0.50
Tolerance mm	: \( \to \) 0.50
Rated speed rpm	: 900
Rated speed rpm	: 755
rack travel mm	: 11.60
Rated speed rpm	: 785
Tolerance 1/min	: +- 4
rack travel mm	: 4.50
rack travel mm	: 0.50
Tolerance mm	: ← 0.50
Rated speed rpm	: 900
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.60 : +- 0.05

Rated speed rpm Rated speed rpm	: >	100 560	
Check speed 1/min	; >	80	
Check speed 1/min	; <	580	
STARTING FUEL DEL	TVERY	,	
Rated speed rpm	:	100	
rack travel mm	:	20.25	
Tolerance mm	: +-	0.75	
Del. quantity cm3/1000 strokes	:	200.0	
Tolerance	•	333.0	
cm3/1000 strokes	: +-	15.0	
Check tolerance cm3/1000s.	. +-	19.0	
LOW IDLE			
R∍ted speed rpm	:	300	
Rated speed rpm Dul. quantity			
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	:	20.0	
Rated speed rpm Dol. quantity cm3/1000 strokes Tolerance cm3/1000 strokes			
Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	•	20.0	
Rated speed rpm Dul. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	•	20.0	
Rated speed rpm Dul. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance	: +-	20.0 3.0 6.0	
Rated speed rpm Dul. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	•	20.0	
Rated speed rpm Dul. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: +-	20.0 3.0 6.0	
Rated speed rpm Dul. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: +-	20.0 3.0 6.0 8.0	

Start interlock

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 10.12.93 Test oil : ISO 4113

Combination No. : 0 402 648 894A

Injection pump

Pump designation : PE8P120A320LS7835

: -10

EP type number : 0 412 628 853

Governor

Governer design. : RQV300...950PA797

: -18

Governer no. : 0 421 813 886

Cust. part No. : 0200740702

Customer—spec. information
Customer : MB-NFZ
Motor : 0M402 LA
Power KW : 280.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.30

Check

tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity

cm3/1000 strokes : 231.0

Tolerance

cm3/1000 strokes : +- 1.0

E01

	+ Tolerance mm : +- 0.25
Check tolerance	
cm3/1000s. : +- 4.0	Rated speed rpm : 1100 guide sleeve
Spreed	travel mm : 10.00 Tolerance mm : + 0.25
Tolerance	+ Toterarice mm : += 0.23
cm3/1000 strokes : 6.0	Rated speed rpm : 1210 guide sleeve
Check tolerance	travel mm : 11.50
cm3/1000s. : 9.0	Tolerance mm : +- 0.50
Rated speed rpm : 300	GUIDE SLEEVE POSITION
Rack travel in mm : 6.20	control lever
Tolerance mm : + 0.10	position degree : - 1
Del. quantity cm3/1000 strokes : 19.0	Rated speed rpm : 980
Tolerance	Rack travel in mm: 16.50
cm3/1000 strokes : + 3.0	† Tolerance mm : + 1.30
Check tolerance cm3/1000s. : +- 6.0	
Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance cm3/1000 strokes : 6.0	Rated speed rpm : 750
Check tolerance	Aneroid pressure
cm3/1000s. : 10.0	+ hPa : 1200 + Del. quantity
	+ cm3/1000 strokes : 231.0
(B) SETTING OF INJECTION PUMP	† Tolerance
WITH GOVERNOR	cm3/1000 strokes : +- 1.0 Check tolerance
	- + cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	+ Spreed + Tolerance
Rated speed rpm : 1008	+ cm3/1000 strokes : 6.0
guide sleeve	Check tolerance
travel mm : 8.52 Tolerance mm : + 0.20	± cm3/1000s. : 9.0
	<del>-</del>
Rated speed rpm : 300 guide sleeve	CONTROL LEVER
travel mm : 1.50	T CONTROL LEVER
Tolerance mm : +- 0.15	- control lever
Rated speed rpm : 589	<pre>position degree : 126.0 tolerance degree : +- 4.0</pre>
guide sleeve	+ total and acgree
travel mm : 4.97	+ RATED SPEED
Tolerance mm : + 0.25	rack travel mm : 13.10 Rated speed rpm : 995
Rated speed rpm : 639	Tolerance 1/min : 5
guide sleeve travel mm : 5.51	t rack travel mm : 4.00
Tolerance mm : + 0.25	+ Rated speed rpm : 1085
	Tolerance 1/min : + 15
Rated speed rpm : 790 guide sleeve	rack travel mm : 0.70
travel mm : 6.48	+ Tolerance mm : + 0.70

Rated speed rpm : 1200 +	Tolerance mm : + 0.10
	Pressure hPa : 550 Tolerance mm : + 0.05
LOW IDLE	Start interlock
control lever position degree : 84.0 tolerance degree : + 4.0	Rated speed rpm : > 100 Rated speed rpm : < 240 Check
Setting point w/out bumper spring	speed 1/min : > 80 Check
Rated speed rpm : 200	speed 1/min : < 260
CRT mm min. : > 7.50	FUEL DELIVERY CHARACTERISTICS
Testing:	TOEL DELIVERY CHARACTERISTICS
Rated speed rpm : 300 rack travel mm : 6.20 Tolerance min : + 0.10 Rated speed rpm : 305	Aneroid pressure hPa : 1200 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 217.5 Tolerance
TORQUE CONTROL	cm3/1000 strokes : + 2.0 Check tolerance
Rated speed rpm : 950 rack travel mm : 14.10 Tolerance mm : + 0.10	<pre>cm3/1000S. : +- 5.0 Spreed Tolerance cm3/1000 strokes : 8.0</pre>
Rated speed rpm : 800 rack travel mm : 14.70 Tolerance mm : + 0.10	Check tolerance cm3/1000s. : 12.0
ANEROID/ALTITUDE COMPENSATOR TEST	rack travel mm : 14.70 Tolerance mm : +- 0.10
SETTING	Aneroid pressure hPa : 550 Rated speed rpm : 400 Del. quantity
Rated speed rpm : 750 Pressure hPa : 1200	cm3/1000 strokes : 190.0 Tolerance
rack travel mm : 14.70 + Tolerance mm : + 0.05 +	<pre>cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000S. : +- 4.5</pre>
Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.45	Aneroid pressure
Tolerance mm : + 0.15	hPa : — Rated speed rpm : 500 Del. quantity
Rated speed rpm : 750	cm3/1000 strokes : 135.0 Tolerance
Pressure hPa : 250	cm3/1000 strokes : +- 1.0 Check tolerance
rack travel mm : 11.05	cm3/1000s. : +- 4.0

E03

### Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

12.0 cm3/1000s.

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity cm3/1000 strokes : 215.0

Tolerance

cm3/1000 strokes : + 15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 300

6.20 Rack travel in mm :

: +- 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s.10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.09.93 Test oil : ISO 4113

Combination No. : 0 402 648 894X

Injection pump

Pump designation : PE8P120A320L\$7835

: -10

: 0 412 628 853 EP type number

Governor

Governer design. : RQV300...950PA797

: -18

Governer no. : 0 421 813 886

Cust. part No. : 0200740702

Customer-spec. information Customer : MB-NFZ : 0M402 LA Motor Power KW : 280.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 1000

REMARKS

# (A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.30

Check

: +- 0.75 tolerance °NW

Start of delivery mark

Barrel no. :

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 14.70 Tolerance mm : + 0.05

E05

t t	Tolerance cm3/1000 strokes : +- 1.0
Del. quantity cm3/1000 strokes : 231.0	Check tolerance cm3/1000s. : +- 4.0
Tolerance + 1.0 +	Spreed Tolerance
Check tolerance	cm3/1000 strokes : 6.0 Check tolerance
cm3/1000s. : +- 4.0	cm3/1000s. : 9.0
Spreed	
Tolerance cm3/1000 strokes : 6.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	control lever position degree : 126.0 tolerance degree : +- 4.0
	RATED SPEED
Rated speed rpm : 300	rack travel mm : 13.10 Rated speed rpm : 995
+	Tolerance 1/min : + 5
Rack travel in mm : 6.20 + Tolerance mm : + 0.10 +	rack travel mm : 4.00
Del. quantity	Rated speed rpm : 1085
cm3/1000 strokes : 19.0	Tolerance 1/min : +- 15
Tolerance + 3.0 +	rack travel mm : 0.70
Check tolerance	Tolerance mm : +- 0.70
cm3/1000s. : +- 6.0 +	Rated speed rpm : 1200
Spreed + Tolerance +	
cm3/1000 strokes : 6.0	
Check tolerance	
cm3/1000s. : 10.0	LOW IDLE
+	and the Land
(B) SETTING OF INJECTION PUMP + WITH GOVERNOR +	control lever position degree : 84.0
THI GOVERNOR	tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
	secting point wroat bumper spring
SOLDE SEELVE 1001/104	Rated speed rpm : 200
control lever	
‡	Rated speed rpm : 200
control lever position degree : -1 Rated speed rpm : 980  Rack travel in mm : 16.50	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300
control lever position degree : -1 Rated speed rpm : 980	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300 rack travel mm : 6.20
control lever position degree : -1 Rated speed rpm : 980  Rack travel in mm : 16.50	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300
control lever position degree : -1 Rated speed rpm : 980  Rack travel in mm : 16.50	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300 rack travel mm : 6.20
control lever position degree : -1 Rated speed rpm : 980  Rack travel in mm : 16.50 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.10  Rated speed rpm : 305
control lever position degree : -1 Rated speed rpm : 980  Rack travel in mm : 16.50 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750 Aneroid pressure	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.10
control lever position degree : -1 Rated speed rpm : 980  Rack travel in mm : 16.50 Tolerance mm : +- 1.30  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 750	Rated speed rpm : 200  CRT mm min. : > 7.50  Testing:  Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.10  Rated speed rpm : 305

rack travel mm Tolerance mm		Tolerance cm3/1000 strokes	: +- 2.0
Rated speed rpm	: 950	+ Check tolerance + cm3/1000s.	: +- 5.0
Rated speed rpm rack travel mm Tolerance mm	: 14.10	Spreed Tolerance	
loterance mm	: 0.10	cm3/1000 strokes	: 8.0
Rated speed rpm	: 800	Check tolerance	40.0
rack travel mm Tolerance mm	: 14.70 : +- 0.05	cm3/1000s.	: 12.0
			44.50
ANEROID/ALTITUDE COMPENSATOR TEST		rack travel mm Tolerance mm	
		+ Aneroid pressure	
SETTING		+ hPa + Rated speed rpm	: 550 · 400
Rated speed rpm	: 400	+ Del. quantity	
Pressure hPa	: 1200	cm3/1000 strokes	: 190.0
rack travel mm Tolerance mm		+ Tolerance + cm3/1000 strokes	: +- 1.5
		+ Check tolerance	
Rated speed rpm	: 400	cm3/1000s.	: +- 4.5
Pressure hPa rack travel mm	10.45		<del></del>
Tolerance mm	: <b>←</b> 0.15	+ Aneroid pressure + hPa	
MEASUREMENT		Rated speed rpm	: 500
Dated speed non	: 400	+ Del. quantity + cm3/1000 strokes	. 135.0
Rated speed rpm	: 400	+ Tolerance	. 133.0
Pressure hPa	: 250	cm3/1000 strokes	: +- 1.0
rack travel mm Tolerance mm		Check tolerance cm3/1000s.	: +- 4.0
		+ Spreed	
Pressure hPa Tolerance mm	: 550 · + 0.05	+ Tolerance + cm3/1000 strokes	. 8.0
rocer arice min	0.03	+ Check tolerance	
Start interlock			: 12.0
Start intertock		Į	
Rated speed rpm		STARTING FIEL DEL	TUEDY
Rated speed rpm	. \ 240	+ STARTING FUEL DEL	TAEKI
Check	. >	Rated speed rpm	: 100
speed 1/min Check	: > 80	+ Del. quantity + cm3/1000 strokes	: 215.0
speed 1/min	: < 260	Tolerance	. 45.0
		cm3/1000 strokes Check tolerance	: +- 15.0
FUEL DELIVERY CHA	RACTERISTICS	cm3/1000s.	: + 19.0
		+	
Aneroid pressure hPa	: 1200	Ţ <u> </u>	
Rated speed rpm		+ LOW IDLE	
Del. quantity cm3/1000 strokes	. 217 5	+ + Rated speed rpm	• 300
CIIIS/ TOOO STEDRES	. 617.3	T Mareu speed rpm	. 500
		•	

Rack travel in mm	:		6.20
Tolerance mm	:	+	0.10
Del. quantity cm3/1000 strokes			19.0
Tolerance	•		17.0
cm3/1000 strokes	:	+-	3.0
Check tolerance			
cm3/1000s.	:	+	6.0
Spreed			
Tolerance			
cm3/1000 strokes	:		6.0
Check tolerance cm3/1000s.			10.0
CIID/ 10003.	٠		10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.09.93 : ISO 4113

Combination No. : 0 402 648 895X

Injection pump

Pump designation : PE8P120A320LS7835

: -10

EP type number : 0 412 628 853

Governor

Governer no.

Governer design: : RQ300/1050PA972-1

: 0 421 801 545

Cust. part No. : 0180742102

Customer-spec. information Customer : MB-NFZ Motor : 0M402 LA Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x Length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

: 8-7-2-6-3 Firing order : - 5- 4- 1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.30

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 8

BASIC SETTING

Del. quantity

cm3/1000 strokes :

231.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance cm3/1000s. : +- 4.0	Check tolerance cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : 6.0	CONTROL LEVER  control lever
Check tolerance cm3/1000s. : 9.0	position degree : 99.0 tolerance degree : +- 4.0
Rated speed rpm : 300	RATED SPEED rack travel mm : 13.00 Rated speed rpm : 1098 Tolerance 1/min : +- 8
Rack travel in mm : 6.20 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 19.0	rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15
Tolerance cm3/1000 strokes : + 3.0 + 6.0 + 6.0	rack travel mm : 0.70 Tolerance mm : + 0.70 Rated speed rpm : 1300
Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance	
cm3/1000s. : 10.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 74.0 tolerance degree : + 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring Rated speed rpm : 200
control lever position degree : 109 Rated speed rpm : 600	CRT mm min. : > 7.80  Testing:
Rack travel in mm : 20.00 + Tolerance mm : + 0.80 +	Rated speed rpm : 300 rack travel mm : 6.20 Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 400
Rated speed rpm : 750 Aneroid pressure hPa : 1200	Tolerance 1/min : +- 20
Del. quantity cm3/1000 strokes : 231.0	TORQUE CONTROL
Tolerance cm3/1000 strokes : + 1.0	Dimension a mm : 0.50
Check tolerance cm3/1000s. : +- 4.0 + Tolerance +-	Rated speed rpm : 1050 rack travel mm : 14.00 Tolerance mm : +- 0.10
cm3/1000 strokes : 6.0	Rated speed rpm : 800

rack travel mm Tolerance mm		Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	
ANEROID/ALTITUDE COMPENSATOR TEST		Check tolerance cm3/1000s.	: +- 4.5
SETTING		Aneroid pressure	
Rated speed rpm Pressure hPa	: 1200	Rated speed rpm Del. quantity	
rack travel mm Tolerance mm	: 14.70 : + 0.05	+ cm3/1000 strokes + Tolerance + cm3/1000 strokes	
Rated speed rpm Pressure hPa rack travel mm	: 500 : - : 10.25	Check tolerance cm3/1000s.	: +- 4.0
Tolerance mm	: + 0.15	Tolerance cm3/1000 strokes	: 8.0
MEASUREMENT Rated speed rpm	: 750	Check tolerance cm3/1000s.	: 12.0
Pressure hPa	: 250		
rack travel mm Tolerance mm	: 11.25 : + 0.10	STARTING FUEL DEL Rated speed rpm	
Pressure hPa Tolerance mm	: 550 : + 0.05	Del. quantity cm3/1000 strokes	
		Tolerance cm3/1000 strokes Check tolerance	: +- 15.0
FUEL DELIVERY CHA	RACTERISTICS	cm3/1000s.	: + 19.0
Aneroid pressure	: 1200	Ī	
Rated speed rpm Del. quantity	: 1050	LOW IDLE	
Tolerance	: 215.5	Rated speed rpm	
cm3/1000 strokes Check tolerance cm3/1000s.	: + 2.0 : + 5.0	+ Rack travel in mm + Tolerance mm + Del. quantity	: 6.20 : + 0.10
Spreed Tolerance		cm3/1000 strokes Tolerance	: 19.0
cm3/1000 strokes Check tolerance		cm3/1000 strokes Check tolerance	
cm3/1000s.	: 12.0	- cm3/1000S. - Spreed - Tolerance	: ← 6.0
rack travel mm Tolerance mm	: 14.70 : +- 0.10	cm3/1000 strokes Check tolerance cm3/1000s.	: 6.0 : 10.0
Aneroid pressure hPa Rated speed rpm	: 550 : 400	- cm3/10005.	. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 06.09.93 Eartion : U6.U9.93 Test oil : ISO 4113

Combination No. : 0 402 648 899

Injection pump

Pump designation : PE8P12OA32OLS7839

: -10

EP type number : 0 412 628 855

Governor

Governer design. : RQ300/950PA971-5

Governer no.

: 0 421 801 559

Cust. part No. : 0200743702

Customer-spec. information

Customer : MB-NFZ

Motor

: OM442 LA

Power KW : 370.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

Tolerance °C

: <del>←</del> 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 110
Tolerance l/h : + 10.0

Test nozzle holde assembly : 1 688 901 105

Opening pressure

: 208.5

Tolerance bar : + 1.5

E13

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

: 8-7-2-6-3

Firing order

: - 5- 4- 1

Phasing

: 0-45-90-135-180

: -225-270-315

Tolerance Check

: +- 0.30 tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm: 15.20

Tolerance mm : +- 0.10

	+ Aneroid pressure
BASIC SETTING	hPa : 900 Del. quantity
Del. quantity cm3/1000 strokes : 266.0	+ cm3/1000 strokes : 266.0 + Tolerance + cm3/1000 strokes : + 1.0
Tolerance cm3/1000 strokes : + 1.0	Check tolerance cm3/1000s. : +- 4.0
Check tolerance	+ Spreed + Tolerance + cm3/1000 strokes : 6.0
cm3/1000s. : +- 4.0	- Check tolerance - cm3/1000s. : 9.0
Spreed	‡
Tolerance cm3/1000 strokes : 6.0	CONTROL LEVER
Check tolerance cm3/1000s. : 9.0	control lever position degree : 104.0 tolerance degree : +- 4.0
Rated speed rpm : 300	+ RATED SPEED + rack travel mm : 15.50 + Rated speed rpm : 998
Rack travel in mm : 6.30 Tolerance mm : + 0.10	Tolerance 1/min : + 8
Del. quantity cm3/1000 strokes : 19.0 Tolerance	+ rack travel mm : 4.00 + Rated speed rpm : 1090 + Tolerance 1/min : + 15
cm3/1000 strokes : + 3.0 Check tolerance cm3/1000s. : + 6.0 Spreed	rack travel mm : 0.75 Tolerance mm : + 0.75 Rated speed rpm : 1150
Tolerance cm3/1000 strokes : 6.0 Check tolerance	+ + + + + + + + + + + + + + + + + + + +
cm3/1000s. : 10.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 74.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
control lever	Rated speed rpm : 200
position degree : 109 Rated speed rpm : 600	CRT mm min. : > 7.60
Rack travel in mm : 20.00	Testing:
Tolerance mm : + 0.80	Rated speed rpm : 300 rack travel mm : 6.30 Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00
Rated speed rpm : 550	Rated speed rpm : 390 Tolerance 1/min : +- 20

TORQUE CONTROL  Rated speed rpm : 950 rack travel mm : 16.50 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  Rated speed rpm : 550 Pressure hPa : 900  2-stage LDA setting  Rated speed rpm : 700 Pressure hPa : 1100 rack travel mm : 0.20  MEASUREMENT  Rated speed rpm : 550 Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 12.0			
Tack travel mm	TORQUE CONTROL		
COMPENSATOR TEST  SETTING  Rated speed rpm : 550 Pressure hPa : 900  2-stage LDA setting  Rated speed rpm : 700 Pressure hPa : 1100 rack travel mm : 0.20  MEASUREMENT  Rated speed rpm : 550 Pressure hPa : 550 Pressure hPa : 550 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 0.05 Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000 strokes : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	rack travel mm	: 16.50	
Rated speed rpm : 550 Pressure hPa : 900  2-stage LDA setting  Rated speed rpm : 700 Pressure hPa : 1100 rack travel mm : 0.20  MEASUREMENT  Rated speed rpm : 550 Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 282.5 Tolerance cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000 strokes : 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance Cm3/1000 strokes : 8.0 Check tolerance			·
Pressure hPa : 900  2-stage LDA setting  Rated speed rpm : 700 Pressure hPa : 1100 rack travel mm : 0.20  MEASUREMENT  Rated speed rpm : 550  Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000 strokes : 8.0 Check tolerance	SETTING		
Rated speed rpm : 700 Pressure hPa : 1100 rack travel mm : 0.20  MEASUREMENT  Rated speed rpm : 550  Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000 strokes : 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance			•
Pressure hPa : 1100 rack travel mm : 0.20  MEASUREMENT  Rated speed rpm : 550  Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	2-stage LDA setti	ing	
Rated speed rpm : 550  Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	Pressure hPa	: 1100	-
Pressure hPa : 550 rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	MEASUREMENT		
rack travel mm : -2.25 Tolerance mm : + 0.05  Pressure hPa : 1300 rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	Rated speed rpm	: 550	
rack travel mm : 0.55 Tolerance mm : + 0.05  Pressure hPa : 250 rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	rack travel mm	: -2.25	•
rack travel mm : -5.00 Tolerance mm : + 0.10  FUEL DELIVERY CHARACTERISTICS  Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	rack travel mm	: 0.55	•
Aneroid pressure hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : + 1.5 Check tolerance cm3/1000s. : + 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	rack travel mm	: -5.00	•
hPa : 2000 Rated speed rpm : 950 Del. quantity cm3/1000 strokes : 282.5 Tolerance cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	FUEL DELIVERY CHA	RACTERISTICS	
Del. quantity  cm3/1000 strokes : 282.5  Tolerance  cm3/1000 strokes : + 1.5  Check tolerance  cm3/1000s. : + 4.5  Spreed  Tolerance  cm3/1000 strokes : 8.0  Check tolerance	hPa		- - -
cm3/1000 strokes : +- 1.5 Check tolerance cm3/1000s. : +- 4.5 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance	Del. quantity cm3/1000 strokes		-
cm3/1000s. : +- 4.5  Spreed  Tolerance  cm3/1000 strokes : 8.0  Check tolerance	cm3/1000 strokes	: + 1.5	-
cm3/1000 strokes : 8.0 Check tolerance	cm3/1000s. Spreed	: +- 4.5	-
	cm3/1000 strokes	: 8.0	-
		: 12.0	-

Aneroid pressure	
hPa	: 1300
Rated speed rpm	: 700
Del. quantity	
cm3/1000 strokes	: 273.0
Tolerance	. 213.0
	: +- 1.5
cm3/1000 strokes	: +- 1.5
Check tolerance	. , -
cm3/1000s.	: +- 4.5
A	
Aneroid pressure	
hPa	: 550
Rated speed rpm	: 400
Del. quantity	
cm3/1000 strokes	: 204.5
Tolerance	
cm3/1000 strokes	: +- 1.5
Check tolerance	
cm3/1000s.	: +- 4.5
	,,,,
Aneroid pressure	
hPa	: -
Rated speed rpm	: 500
Del. quantity	. 300
cm3/1000 strokes	: 133.0
Tolerance	. 155.0
cm3/1000 strokes	: +- 1.0
	. — 1.0
Check tolerance	
cm3/1000s.	: +- 4.0
Spreed	
Tolerance	_
cm3/1000 strokes	: 8.0
Check tolerance	
cm3/1000s.	: 12.0
STARTING FUEL DEL	IVERY

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm Tolerance mm	:	+-	9.30
Del. quantity	٠		
cm3/1000 strokes Tolerance	:		90.0
cm3/1000 strokes	:	+-	10.0
Check tolerance			44.0
cm3/1000s.	:	+-	14.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.30

: +-	0.10
:	19.0
: +-	3.0
: +-	6.0
:	6.0
:	10.0
	: +- : +- : +-

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.09.93 Edition Test oil : ISO 4113

Combination No. : 0 402 648 902

Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0 412 628 855

Governor

Governer design. : RQ300/1050PA972-5 : 0 421 801 564

Governer no.

Cust. part No. : 0200743902

Customer-spec. information Customer : MB-NFZ : 0M442 LA Motor Power KW : 370.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure
: 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : ← 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

: **←** 0.30 Tolerance

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 15.20

Tolerance mm : + 0.10

BASIC SETTING

1	Tolerance
Del. quantity	cm3/1000 strokes : +- 1.0
cm3/1000 strokes : 266.0	Check tolerance
	cm3/1000s. : +- 4.0
Tolerance	Spreed
cm3/1000 strokes : +- 1.0 +	Tolerance cm3/1000 strokes : 6.0
Check tolerance	Check tolerance
cm3/1000s. : +- 4.0	cm3/1000s. : 9.0
Spreed	
7-1	CONTROL LEVER
Tolerance cm3/1000 strokes : 6.0	CONTROL LEVER
Chis/1000 Strokes . C.O	control lever
Check tolerance	position degree : 102.0
cm3/1000s. : 9.0 +	tolerance degree : +- 4.0
	DATES OBERS
İ	RATED SPEED rack travel mm : 15.30
Rated speed rpm : 300	Rated speed rpm : 1098
thatea speca (pin )	Tolerance 1/min : + 8
Rack travel in mm: 6.30	
Tolerance mm : + 0.10 +	rack travel mm : 4.00
Del. quantity + cm3/1000 strokes : 19.0 +	Rated speed rpm : 1175 Tolerance 1/min : +- 15
Tolerance	Toterance Minn : += 13
cm3/1000 strokes : + 3.0	rack travel mm : 0.75
Check tolerance	Tolerance mm : +- 0.75
cm3/1000s. : +- 6.0 +	Rated speed rpm : 1250
Spreed	
Tolerance + cm3/1000 strokes : 6.0 +	
Check tolerance	
cm3/1000s. : 10.0	LOW IDLE
+	
(D) CETTING OF THE CETTON DUMP	control lever
(B) SETTING OF INJECTION PUMP + WITH GOVERNOR +	position degree : 74.0
42117 6542141614	tolerance degree : + 4.0
<del>}</del>	-
	Setting point w/out bumper spring
GUIDE SLEEVE POSITION	Rated speed rpm : 200
<u> </u>	Nated Speed (pill . 200
control lever	CRT mm min. : > 7.80
position degree : 109	
Rated speed rpm : 600	Testing:
Rack travel in mm: 20.00	Rated speed rpm : 300
Tolerance mm : +- 0.80	rack travel mm : 6.30
+	rack travel mm : 6.30 Tolerance mm : +- 0.10
+	
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 2.00 Rated speed rpm : 400
Rated speed rpm : 550	Tolerance 1/min : +- 20
Aneroid pressure	10 to thing 17 mill
hPa : 900 +	
Del. quantity	TORQUE CONTROL
cm3/1000 strokes : 266.0 +	

Rated speed rpm		+	<del></del>
rack travel mm		+ Aneroid pressure	
Tolerance mm	: <b>←</b> 0.10	+ hPa	: 2000
	000	+ Rated speed rpm	: 800
Rated speed rpm		+ rack travel mm	
rack travel mm		+ Tolerance mm	: +- 0.10
Tolerance mm	: +- 0.10	+ Del. quantity + cm3/1000 strokes	: 285.0
		Tolerance	: 203.0
ANEROID/ALTITUDE		cm3/1000 strokes	: +- 2.0
COMPENSATOR TEST		Check tolerance	2.0
CONTRACTOR TEST		+ cm3/1000s.	: +- 5.0
		Spreed	
SETTING		+ Tolerance	
		+ cm3/1000 strokes	: 8.0
Rated speed rpm		+ Check tolerance	
Pressure hPa	: 900	+ cm3/1000s.	: 12.0
		+	
2-stage LDA sett	ing	+	
Data	. 700	Aneroid pressure	. 1700
Rated speed rpm	: 700 : 1100	+ hPa	: 1300 : 700
Pressure hPa rack travel mm		+ Rated speed rpm + Del. quantity	: 700
Fack Clave Chill	. 0.20	cm3/1000 strokes	: 273.5
MEASUREMENT		Tolerance	. 273.3
TIENDONEI IEM		cm3/1000 strokes	: <del>+-</del> 1.5
Rated speed rpm	: 550	+ Check tolerance	
THE OPEN TEN		+ cm3/1000s.	: <del>+-</del> 4.5
Pressure hPa	: 550	+	
rack travel mm	: -2.25	<del></del>	
Tolerance mm	: +- 0.05	+ Aneroid pressure	
	4===	+ hPa	: 550
Pressure hPa	: 1300	+ Rated speed rpm	: 400
rack travel mm	: 0.55	Del. quantity	20/ 5
Tolerance mm	: ← 0.05	+ cm3/1000 strokes	: 204.5
Brazzina bBa	: 250	+ Tolerance + cm3/1000 strokes	: <del>+-</del> 1.5
Pressure hPa rack travel mm	: <del>-</del> 5.00	+ Check tolerance	: +- 1.5
Tolerance mm	: +- 0.10	+ cm3/1000s.	: +- 4.5
TOTEL BLICE INII	0.10	I cm3/10003.	4.5
		Aneroid pressure	
FUEL DELIVERY CHA	ARACTERISTICS	+ hPa	: -
		+ Rated speed rpm	: 500
<del></del>		+ Del. quantity	4== =
Aneroid pressure	25.5	+ cm3/1000 strokes	: 133.0
hPa	: 2000	+ Tolerance	4.0
Rated speed rpm	: 1050	+ cm3/1000 strokes	: +- 1.0
Del. quantity	: 272.5	+ Check tolerance	
cm3/1000 strokes	: 272.5	+ cm3/1000s. + Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: +- 1.5	+ Spreed + Tolerance	
Check tolerance		cm3/1000 strokes	: 8.0
cm3/1000S.	: +- 4.5	Check tolerance	. 0.0
Spreed	, , 7.5	- cm3/1000s.	: 12.0
Tolerance		1	
cm3/1000 strokes	: 8.0	1	
Check tolerance		+	
cm3/1000s.	: 12.0	+ STARTING FUEL DEL	IVERY

Rated speed rpm : 100 rack travel mm : 9.30 Tolerance mm : + 0.20

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.30 Tolerance mm : +- 0.10 Del. quantity

cm3/1000 strokes : 19.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance

cm3/1000s. : **←** 6.0

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. : 10.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.09.93 Edition Edition : 06.09.93 Test oil : ISO 4113

Combination No. : 0 402 648 907

Injection pump

Pump designation : PE8P120A320LS7839

: -10

EP type number : 0 412 628 855

Governor

Governer design: : RQV300...950PA797

: -22

Governer no. : 0 421 813 909

Cust. part No. : 0200743802

Customer-spec. information Customer : MB-NFZ Motor : OM442 LA Motor Power KW : 370.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110
Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar

Tolerance bar : +- 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm: 15.20

Tolerance mm : + 0.20

-	Aneroid pressure
BASIC SETTING -	hPa : 900 Del. quantity
Del. quantity	cm3/1000 strokes : 266.0 Tolerance
cm3/1000 strokes : 266.0	cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000s. : +- 4.0 Spreed Tolerance
Check tolerance cm3/1000s. : +- 4.0	cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
Spreed	- (113) 10003 9.0
Tolerance cm3/1000 strokes : 6.0	CONTROL LEVER
Check tolerance	control lever
cm3/1000s. : 9.0 -	position degree : 122.0 tolerance degree : +- 4.0
]	RATED SPEED
Rated speed rpm : 300 -	rack travel mm : 15.50 Rated speed rpm : 995
Rack travel in mm: 6.30 - Tolerance mm: + 0.10	Tolerance 1/min : +- 5
Del. quantity	rack travel mm : 4.00
cm3/1000 strokes : 19.0 - Tolerance -	Rated speed rpm : 1115 Tolerance 1/min : +- 15
cm3/1000 strokes : +- 3.0	
Check tolerance - cm3/1000s. : +- 6.0 - Spreed	- rack travel mm : 0.70 - Tolerance mm : +- 0.70 - Rated speed rpm : 1200
Tolerance	rated speed (pill : 1200
cm3/1000 strokes : 6.0 - Check tolerance	
cm3/1000s. : 10.0	LOW IDLE
(D) CETTING OF THIS COTTON DIME	
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 86.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
control lever	Rated speed rpm : 200
position degree : -1	- CRT mm min. :> 8.00
Rated speed rpm : 1050	- - Testing:
Rack travel in mm: 16.50 Tolerance mm: +- 1.30	-
TOTAL ALL STATE	rack travel mm : 6.30
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : +- 0.10
Rated speed rpm : 550	- Rated speed rpm : 350
The second secon	_

		± To	lerance	
	<del></del>		3/1000 strokes	: +- 1.5
TORQUE CONTROL			eck tolerance 3/1000s.	5
Rated speed rpm	: 950		reed	. +- 4.5
rack travel mm Tolerance mm	: 16.50	→ To	lerance	
Tolerance mm	: <del></del> 0.10		3/1000 strokes	: 8.0
			eck tolerance 3/1000s.	: 12.0
ANEROID/ALTITUDE COMPENSATOR TEST		‡		. 12.0
			eroid pressure	
SETTING		+ hPa	a ted speed rpm	: 700
25117140			l. quantity	. 700
Rated speed rpm	: 550	+ cm3	3/1000 strokes	: 273.0
Pressure hPa	: 900		lerance	
2 INA+-	·		3/1000 strokes	: +- 1.5
2-stage LDA setti	ng		eck tolerance 3/1000s.	: +- 4.5
Rated speed rpm	: 700	T CIT	,, 10000 .	7.2
Pressure hPa	: 1100	+	<del></del>	
rack travel mm	: 0.20		eroid pressure	
ME A OLIDERATE T		+ hPa	a And annual none	: -
MEASUREMENT		T Kat	ted speed rpm L. quantity	: 400
Rated speed rpm	: 550	- cm3	3/1000 strokes	: 204.5
		+ Tol	lerance	
Pressure hPa	: 550		3/1000 strokes	: +- 1.5
rack travel mm			eck tolerance	
Tolerance mm	: <b>←</b> 0.05	+ cm3	3/1000s.	: +- 4.5
Pressure hPa	: 1300	I		
	: 0.55	. ↓ Ane	eroid pressure	
Tolerance mm	: <b>←</b> 0.05	→ hPa	3	:
	252		ted speed rpm	: 500
Pressure hPa rack travel mm	: 250 : -5.00	+ Del	l. quantity 3/1000 strokes	. 133 ()
Tolerance mm	: ← 0.10		lerance	. 133.0
, , , , , , , , , , , , , , , , , , , ,			3/1000 strokes	: +- 1.0
			eck tolerance	
Start interlock			3/1000s.	: ← 4.0
Pated speed rom	. > 100		reed Lerance	
Rated speed rpm Rated speed rpm	: < 240		3/1000 strokes	: 8.0
		+ Che	eck tolerance	
Check		+ cm3	3/1000s.	: 12.0
•	: > 80	†		
Check speed 1/min	: < 260	İ		
speed (/ iii (r)	. \ 200	STA	ARTING FUEL DEL	IVERY
FUEL DELIVERY CHA	RACTERISTICS	↓ Rat	ed speed rpm	: 100
		+ Del	. quantity	
	<del></del>		3/1000 strokes	: 285.0
Aneroid pressure hPa	: 2000		erance 3/1000 strokes	. +- 10 0
nra Rated speed rpm			eck tolerance	10.0
Del. quantity	. ,,,,		3/1000s.	: +- 14.0
cm3/1000 strokes	: 282.5	+		
		·		

# LOW IDLE

Rated speed rpm	:		300
Rack travel in mm Tolerance mm Del. quantity	-	+-	6.30 0.10
cm3/1000 strokes	:		19.0
cm3/1000 strokes	:	+-	3.0
Check tolerance cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes	:		6.0
Check tolerance cm3/1000s.	:		10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.09.93 Edition : ISO 4113 Test oil

Combination No. : 0 402 648 914X

### Injection pump

Pump designation : PE8P120A320LS7835

: -10

EP type number : 0 412 628 853

Governor

Governer design. : RQV300...1050PA797

: -30

Governer no. : 0 421 813 921

Cust. part No. : 0180742202

Customer-spec. information Customer : MB-NFZ : 0M402 A Motor Power KW : 280.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

: 110 min. L/h Tolerance L/h : + 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar

Tolerance bar : +- 1.5

Test Lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

rest pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05 : +- 0.05 Tolerance mm

Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3 : - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

: +- 0.30 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. :

### BASIC SETTING

Del. quantity

cm3/1000 strokes : 231.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s. : +- 4.0	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
Spreed	†
Tolerance cm3/1000 strokes : 6.0	CONTROL LEVER
Check tolerance cm3/1000S. : 9.0	control lever position degree : 122.0 tolerance degree : +- 4.0
Rated speed rpm : 300	RATED SPEED  rack travel mm : 13.00  Rated speed rpm : 1095
Rack travel in mm : 6.20 Tolerance mm : +- 0.10	+ Tolerance 1/min : + 5
Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +- 3.0	rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : + 15
Check tolerance cm3/1000S. : +- 6.0 Spreed Tolerance	rack travel mm : 0.70 Tolerance mm : + 0.70 Rated speed rpm : 1300
cm3/1000 strokes : 6.0 Check tolerance	
cm3/1000s. : 10.0	LOW IDLE
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	control lever position degree : 86.0 tolerance degree : +- 4.0
GUIDE SLEEVE POSITION	Setting point w/out bumper spring
control lever	+ Rated speed rpm : 200
position degree : - 1 Rated speed rpm : 1130	CRT mm min. : > 7.80
Rack travel in mm : 13.90 Tolerance mm : +- 1.30	Testing:  Rated speed rpm : 300  rack travel mm : 6.20  Tolerance mm : +- 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 400
Rated speed rpm : 750 Aneroid pressure	Rated Speed (pill) . 400
hPa : 1200 Del. quantity	TORQUE CONTROL
cm3/1000 strokes : 231.0 Tolerance	Dimension a mm : 0.60
<pre>cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 4.0</pre>	+ Rated speed rpm : 1050 + rack travel mm : 14.00 + Tolerance mm : + 0.10
Spreed	Rated speed rpm : 800

rack travel mm : 14.70 Tolerance mm : +- 0.10	rack travel mm : 14.70
ANEROID/ALTITUDE	Tolerance mm : +- 0.10
COMPENSATOR TEST	Aneroid pressure
	+ hPa : 550
SETTING	+ Rated speed rpm : 400
Rated speed rpm : 750	+ Del. quantity + cm3/1000 strokes : 190.0
Rated speed rpm : 750 Pressure hPa : 1200	+ Tolerance
rack travel mm : 14.70	+ cm3/1000 strokes : +- 1.5
Tolerance mm : +- 0.05	+ Check tolerance
Date of amount amount of ECO	+ cm3/1000s. : +- 4.5
Rated speed rpm : 500 Pressure hPa : -	İ
rack travel mm : 10.25	Aneroid pressure
Tolerance mm : + 0.15	+ hPa : -
	+ Rated speed rpm : 500
MEASUREMENT	+ Del. quantity + cm3/1000 strokes : 132.0
Rated speed rpm : 750	Tolerance
nacca opeca (piii . 150	+ cm3/1000 strokes : +- 1.0
Pressure hPa : 250	+ Check tolerance
rack travel mm : 11.25	+  cm3/1000s. : +- 4.0
Tolerance mm : +- 0.10	+ Spreed + Tolerance
Pressure hPa : 550	+ cm3/1000 strokes : 8.0
Tolerance mm : + 0.05	+ Check tolerance
	+ cm3/1000s. : 12.0
Charle dishard cale	†
Start interlock	
Rated speed rpm : > 100	+ STARTING FUEL DELIVERY
Rated speed rpm : < 220	+
	+ Rated speed rpm : 100
Check speed 1/min : > 80	+ Del. quantity + cm3/1000 strokes : 215.0
Check	+ Tolerance
speed 1/min : < 240	+ cm3/1000 strokes : + 15.0
	+ Check tolerance
FUEL DELIVERY CHARACTERISTICS	+  cm3/1000S. : $+ 19.0$
LOSE RESTACK! CUNKACLEKTOLICO	I
	+
Aneroid pressure	1
hPa : 1200 Rated speed rpm : 1050	+ LOW IDLE
Rated speed rpm : 1050 Del. quantity	+ Rated speed rpm : 300
cm3/1000 strokes : 215.5	+
Tolerance	Rack travel in mm: 6.20
cm3/1000 strokes : +- 2.0	Tolerance mm : +- 0.10
Check tolerance cm3/1000s. : +- 5.0	+ Del. quantity + cm3/1000 strokes : 19.0
Spreed	+ Tolerance
Tolerance	+ cm3/1000 strokes : +- 3.0
cm3/1000 strokes : 8.0	- Check tolerance
Check tolerance cm3/1000s. : 12.0	+ cm3/1000s. : +- 6.0
cm3/1000s. : 12.0	+ Spreed

Tolerance cm3/1000 strokes : Check tolerance cm3/1000S. : 6.0

10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 17.03.94 : ISO 4113 Test oil

Combination No. : 0 402 678 820

Injection pump

Pump designation : PE8P120A320LS7823-1 EP type number : 0 412 628 872

Governor

Governer design. : RSV350...1050POA535

: -9

Governer no. : 0 421 833 393

Cust. part No. : 0240742402

Customer-spec. information Customer : MB-NFZ : 0M442LA Motor Power KW : 362.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

40 temp. °C Tolerance °C : + 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Tolerance l/h: +- 10.0

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25 Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

: 0-45-90-135-180 Phasing

: -225-270-315

: +- 0.30 Tolerance

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Barrel no. : 8

### CRT ZERO POSITION

Rack travel in mm: 13.75 Tolerance mm : +- 0.05

BASIC SETTING

Rated speed rpm : 600

1	Aneroid pressure
Rack travel in mm : 13.75 Tolerance mm : + 0.05	hPa : 900 Del. quantity
Del. quantity	cm3/1000 strokes : 235.5 Tolerance
cm3/1000 strokes : 235.5	cm3/1000 strokes : +- 1.5 Check tolerance
Tolerance cm3/1000 strokes : + 1.5	cm3/1000s. : +- 4.5 Spreed Tolerance
Check tolerance cm3/1000S. : + 4.5	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Spreed	. , , , ,
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000S. : 9.0	control lever position degree : 94.0 tolerance degree : + 4.0
Rated speed rpm : 350	ASSEMBLY GOVERNOR SETTING
Rack travel in mm : 5.10 Tolerance mm : + 0.10 Del. quantity	Rated speed rpm : 1070 rack travel mm : 13.40
cm3/1000 strokes : 18.0 + Tolerance cm3/1000 strokes : + 3.0 + Compared to the compared to the	Rated speed rpm : 1139 Tolerance 1/min : + 4 rack travel mm : 4.00
Check tolerance cm3/1000s. : + 6.0	rack travel mm : 0.85
Spreed Tolerance	Tolerance mm : ← 0.55 Rated speed rpm : 1400
cm3/1000 strokes : 8.0 + Check tolerance	·
cm3/1000s. : 12.0	Rated speed rpm : 1071 rack travel mm : 13.40
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 1140 Tolerance 1/min : +- 4
WITH GOVERNOR	rack travel mm : 4.00
GUIDE SLEEVE POSITION	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1400
control lever position degree : -3	
Rated speed rpm : 800	Rated speed rpm : 1072 rack travel mm : 13.40
Rack travel in mm : 0.50 Tolerance mm : + 0.20	Rated speed rpm : 1141 Tolerance 1/min : +- 4 rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85
Rated speed rpm : 600	Tolerance mm : + 0.55 Rated speed rpm : 1400

Rated speed rpm	: 1073
rack travel mm	: 13.40
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1400
Rated speed rpm	: 1078
rack travel mm	: 13.40
Rated speed rpm	: 1147
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1400
Rated speed rpm	: 1079
rack travel mm	: 13.40
Rated speed rpm	: 1148
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1400
LOW IDLE	
control lever position degree tolerance degree	: 68.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 19.50
Testing:	
Rated speed rpm	: 350
rack travel mm	: 5.10
Tolerance mm	: ← 0.10
rack travel mm	: 2.00
Rated speed rpm	: 390
Tolerance 1/min	: +- 30

SET IDLE AUXILIA	RY SPRING
rack travel mm	: 2.00
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 600 : 13.75 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1030 : 14.50 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 15.00
Rated speed rpm rack travel mm Tolerance mm	: 800 : 15.40 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 15.45 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST 2-stage LDA sett	ing
Rated speed rpm Pressure hPa	
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 350 : -2.40 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 500 : −0.80 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 1050 : 0.20 : +- 0.05
Pressure hPa rack travel mm Tolerance mm	: 1250 : 1.10 : +- 0.10
<del></del>	

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa		1600
=	•	1030
Rated speed rpm	٠	1030
Del. quantity		25/ 5
cm3/1000 strokes	:	254.5
Tolerance		
cm3/1000 strokes	:	<b>←</b> 1.5
Check tolerance		
cm3/1000s.	:	<del>←</del> 4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0
-		
and the second s		

Aneroid pressure		
hPa	:	1600
Rated speed rpm	:	800
rack travel mm	:	15.00
Tolerance mm	: +	<del>-</del> 0.10
Del. quantity		
cm3/1000 strokes	:	272.5
Tolerance		
cm3/1000 strokes	: +	<b>-</b> 1.5
Check tolerance		
cm3/1000s.	: +	- 4.5
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000s.	:	12.0

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		142.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0
Spreed			
Tolerance			
cm3/1000 strokes	:		8.0

# STARTING FUEL DELIVERY

Rated speed rpm	:	100
Del. quantity		
cm3/1000 strokes	:	250.0
Tolerance		
cm3/1000 strokes	: +-	10.0
Check tolerance		
cm3/1000s.	: +-	14.0

LOW IDLE				
Rated speed rpm	:		350	
Rack travel in mm Tolerance mm Del. quantity	:	+-	5.10 0.10	
cm3/1000 strokes Tolerance	:		18.0	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000S. Spreed Tolerance	:	+-	6.0	
cm3/1000 strokes Check tolerance	:		8.0	
cm3/1000s.	:		12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.03.98 Edition Test oil : ISO 4113

Combination No. : 0 402 678 835

Injection pump

Pump designation : PE8P120A320LS7844 EP type number : 0 412 628 860

Governor

Governer design. : RSV350...1050P0A673

Governer no. : 0 421 833 590

Cust. part No. : 0270746802

Customer-spec. information Customer : MB-NFZ Motor : OM442LA Motor Power KW : 370.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1 Inlet press. bar :

Overflow quantity
min. l/h : 200
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 1000

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180 : -225-270-315

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : ← 0.75

Barrel no. : 8

### BASIC SETTING

Rated speed rpm : 1030

Rack travel in mm : 15.30 Tolerance mm :  $\leftarrow$  0.05

+	Aneroid pressure
Del. quantity cm3/1000 strokes : 272.0	hPa : 1200 Del. quantity
Tolerance	cm3/1000 strokes : 272.0 Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : +- 4.0	cm3/1000S. : +- 4.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 5.0 Check tolerance
Tolerance cm3/1000 strokes : 5.0	cm3/1000s. : 9.0
Check tolerance cm3/1000s. : 9.0	CONTROL LEVER
	control lever position degree : 96.0
Rated speed rpm : 350	tolerance degree : + 4.0
Rack travel in mm : 5.00 Tolerance mm : + 0.10	ASSEMBLY GOVERNOR SETTING
Del. quantity + cm3/1000 strokes : 19.0 + Tolerance +	Rated speed rpm : 1070 Tolerance 1/min : +- 1
cm3/1000 strokes : + 3.0 Check tolerance	rack travel mm : 14.30
cm3/1000s. : + 6.0  Spreed Tolerance	Rated speed rpm : 1150 Tolerance 1/min : +- 4 rack travel mm : 4.00
cm3/1000 strokes : 8.0	rack travel mm : 0.85
Check tolerance cm3/1000s. : 12.0	Tolerance mm : +- 0.55 Rated speed rpm : 1250
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	Rated speed rpm : 1072 Tolerance 1/min : +- 1 rack travel mm : 14.30
GUIDE SLEEVE POSITION	Rated speed rpm : 1152 Tolerance 1/min : + 4 rack travel mm : 4.00
control lever position degree : -3	rack travel mm : 0.85
Rated speed rpm : 800	Tolerance mm : +- 0.55 Rated speed rpm : 1250
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	407/
governor spring + pre-tension + 7.00	Rated speed rpm : 1074 Tolerance 1/min : +- 1 rack travel mm : 14.30
click setting x : 3.00	Rated speed rpm : 1154 Tolerance 1/min : + 4
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 4.00
Rated speed rpm : 1030	rack travel mm : 0.85

Tolerance mm : + 0.55 Rated speed rpm : 1250	+ Tolerance mm : + 0.10
	rack travel mm : 2.00 Rated speed rpm : 385
Rated speed rpm : 1076	† Tolerance 1/min : +- 30
Tolerance 1/min : + 1 rack travel mm : 14.30	†
rack travel mm : 14.30	+ SET IDLE AUXILIARY SPRING
Rated speed rpm : 1156	rack travel mm : 2.00
Tolerance 1/min : + 4	Tack travel inn
rack travel mm : 4.00	
	+ TORQUE CONTROL
rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1250	Rated speed rpm : 1030 rack travel mm : 15.30 Tolerance mm : + 0.05
Tolerance mm : +- 0.55	+ rack travel mm : 15.30
Rated speed rpm : 1250	1 Toterance mm : + U.U5
	T Rated speed rom : 800
Rated speed rpm : 1078	Rated speed rpm : 800 rack travel mm : 15.30 Tolerance mm : + 0.10
Tolerance 1/min : +- 1	+ Tolerance mm : + 0.10
Tolerance 1/min : +- 1 rack travel mm : 14.30	+
445	
Rated speed rpm : 1158 Tolerance 1/min : + 4	ANEROID/ALTITUDE
rack travel mm : 4.00	COMPENSATOR TEST
rack travet min : 4.00	I
rack travel mm : 0.85	+ SETTING
rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1250	+
Rated speed rpm : 1250	+ CRT ZERO POSITION
	Rated speed rpm : 1030 rack travel mm : 15.30 Tolerance mm : + 0.05  Rated speed rpm : 800 rack travel mm : 15.30 Tolerance mm : + 0.10  ANEROID/ALTITUDE COMPENSATOR TEST  SETTING  CRT ZERO POSITION  Rack travel in mm : 8.40 Tolerance mm : + 0.15  Rated speed rpm : 500 Pressure hPa : -  MEASUREMENT  Pressure hPa : 180  Pressure hPa : 180
Rated speed rpm : 1080	+ Rack travel in mm : 8.40 + Tolerance mm : + 0.15
Tolerance 1/min : + 1	Total arce min
Tolerance 1/min : + 1 rack travel mm : 14.30	+ Rated speed rpm : 500
	Rated speed rpm : 500 Pressure hPa : -
Rated speed rpm : 1160 Tolerance 1/min : +- 4	
Tolerance 1/min : +- 4	+ MEASUREMENT
rack travel mm : 4.00	T Pressure hPa · 180
rack travel mm : 0.85	Pressure hPa : 180 rack travel mm : 0.40
Tolerance mm : + 0.55	+ Tolerance mm : + 0.05
Rated speed rpm : 1250	+
	+ Pressure hPa : 670
	rack travel mm : 5.00
LOW IDLE	Tolerance mm : + 0.15
	I
control lever	
position degree : 70.0	FUEL DELIVERY CHARACTERISTICS
tolerance degree : +- 4.0	+
Out the same and and and the same as a same as	Anna and a management
Setting point w/out bumper spring	+ Aneroid pressure + hPa : 1200
Rated speed rpm : 100	Rated speed rpm : 800
the contract that the contract	+ Del. quantity
CRT mm min. : > 19.50	+ cm3/1000 strokes : 277.0
	+ Tolerance
Testing:	- cm3/1000 strokes : +- 3.0
Pated speed row : 350	+ Check tolerance + cm3/1000s. : +- 6.0
Rated speed rpm : 350 rack travel mm : 5.00	+ Spreed
I GUN LI GYCL HAD . J. UU	1 Opi CCG

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s.

12.0

Aneroid pressure

hPa

500 Rated speed rpm

Del. quantity

cm3/1000 strokes :

140.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

4.0 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 8.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 270.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : + 19.0

# LOW IDLE

350 Rated speed rpm :

5.00 Rack travel in mm : Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.02.98 Test oil : 10.02.76

Combination No. : 0 402 678 836

Injection pump

Pump designation : PE8P120A320LS7844 EP type number : 0 412 628 860

Governor

Governer design. : RSV550...1050P0A672

Governer no. : 0 421 833 591

Cust. part No. : 0270746402

Customer-spec. information Customer : MB-NFZ : 0M442LA Motor : 370.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 225 Tolerance l/h : + 20.0 min. L/h

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

208.5 bar Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

rest pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

: ← 0.10 tolerance mm

Rack travel in mm : 20.00 Tolerance mm : ← 1.00

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 : **←** 0.50

Tolerance Check

tolerance °NW : **←** 0.75

Start of delivery mark

: **←** 0.10 Tolerance

Check

tolerance °NW : +- 0.75

: 8 Barrel no.

BASIC SETTING

Rated speed rpm : 1030

F09

+	
Rack travel in mm: 15.60	FULL LOAD DELTUEDY AT FULL LOAD OTOD
Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
	2 1 1 4070
Del. quantity +	Rated speed rpm : 1030
cm3/1000 strokes : 270.0	Aneroid pressure
	hPa : 1200
Tolerance	Del. quantity
cm3/1000 strokes : + 1.0 +	cm3/1000 strokes : 270.0
	Tolerance
Check tolerance +	cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 4.0 +	Check tolerance
+	cm3/1000s. : +- 4.0
Spreed	Spreed
+	Tolerance
Tolerance	cm3/1000 strokes : 5.0
cm3/1000 strokes : 5.0	Check tolerance
	cm3/1000s. : 9.0
Check tolerance	
cm3/1000s. : 9.0	
	CONTROL LEVER
1	CONTINUE ELVEI:
Rated speed rpm : 550	control lever
Rated speed (pii) . 330	position degree : 88.0
Rack travel in mm: 4.00	tolerance degree : + 4.0
Tolerance mn : + 0.10	toterance degree . The 4.0
Del. quantity + cm3/1000 strokes : 19.0 +	ASSEMBLY GOVERNOR SETTING
	ASSEMBLE GOVERNOR SELLING
Tolerance	Rated speed rpm : 1070
cm3/1000 strokes : + 3.0	
Check tolerance	Tolerance 1/min : + 1
cm3/1000s. : +- 6.0	rack travel mm : 14.60
Spreed	4440
Tolerance	Rated speed rpm : 1110
cm3/1000 strokes : 8.0	Tolerance 1/min : +- 4
Check tolerance	rack travel mm : 4.00
cm3/1000s. : 12.0 +	
+	rack travel mm : 0.85
+	Tolerance mm : + 0.55
(B) SETTING OF INJECTION PUMP +	Rated speed rpm : 1200
WITH GOVERNOR +	
+	
+	Rated speed rpm : 1071
	Tolerance 1/min : +- 1
GUIDE SLEEVE POSITION +	rack travel mm : 14.60
+	
+	Rated speed rpm : 1111
control lever	Tolerance 1/min : +- 4
position degree : -3	rack travel mm : 4.00
Rated speed rpm : 800 +	
+	rack travel mm : 0.85
Rack travel in mm: 0.50	Tolerance mm : + 0.55 Rated speed rpm : 1200
Tolerance mm : + 0.20 +	Rated speed rpm : 1200
TO SECURITY OF THE SECURITY OF	
governor spring	
pre-tension +	Rated speed rpm : 1072
click setting x : 2.00	Tolerance 1/min : +- 1
CLICK Setting X . C.UU	rack travel mm : 14.60
Ť	rauk travet iiiii . 14.00
+	

Rated speed rpm	: 1112
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1200
Rated speed rpm	: 1073
Tolerance 1/min	: +- 1
rack travel mm	: 14.60
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 1200
Rated speed rpm	: 1074
Tolerance 1/min	: +- 1
rack travel mm	: 14.60
Rated speed rpm Tolerance 1/min rack travel mm	
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1200
Rated speed rpm	: 1175
Tolerance 1/min	: ← 1
rack travel mm	: 14.60
Rated speed rpm	: 1115
Tolerance 1/min	: + 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 1200
LOW IDLE	
control lever position degree tolerance degree	: 70.0 : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

# Testing:

Rated speed rpm	:		550
rack travel mm	:		4.00
Tolerance mm	:	+-	0.10

### SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1030 rack travel mm : 15.60 Tolerance mm : + 0.05

Rated speed rpm : 600 rack travel mm : 15.60 Tolerance mm :  $\leftarrow 0.10$ 

# ANEROID/ALTITUDE COMPENSATOR TEST

### SETTING

# CRT ZERO POSITION

Rack travel in mm : 9.75 Tolerance mm : + 0.15

Rated speed rpm : 450
Pressure hPa : 1200
rack travel mm : 15.60
Tolerance mm : + 0.10

Rated speed rpm : 450
Pressure hPa : rack travel mm : 9.75
Tolerance mm : + 0.20

# MEASUREMENT

Rated speed rpm : 450

Pressure hPa : 600 rack travel mm : 12.20 Tolerance mm : + 0.15

Pressure hPa : 800 rack travel mm : 14.10 Tolerance mm : + 0.20

### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1200 hPa Rated speed rpm 600

Del. quantity cm3/1000 strokes : 287.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

6.0 cm3/1000s. : +-

Aneroid pressure

hPa 500 Rated speed rpm

Del. quantity

162.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. 4.0

# STARTING FUEL DELIVERY

Rated speed rpm 100

Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : + 19.0

# LOW IDLE

Rated speed rpm : 550

Rack travel in mm : 4.00 : **←** 0.10 Tolerance mm

Del. quantity

cm3/1000 strokes : 19.0

Tolerance

cm3/1000 strokes : +-3.0 Check tolerance

: +cm3/1000S. 6.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 28.11.97 Test oil : ISO 4113

Combination No. : 0 402 678 839

Injection pump

Pump designation : PE8P120A320LS7912 EP type number : 0 412 628 927

Governor

Governer design. : RSV550...1050P0A681

Governer no. : 0 421 833 600

Cust. part No. : 028 074 2802

Customer—spec. information Customer : MB-NFZ

Motor : OM402LA, Euro

Power KW : 280.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 120 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 8

### BASIC SETTING

Rated speed rpm : 1030

,	Ananaid managina
Rack travel in mm: 13.70 Tolerance mm: + 0.05	Aneroid pressure hPa : 1000 Del. quantity
	cm3/1000 strokes : 208.0 Tolerance
Del. quantity cm3/1000 strokes : 208.0	cm3/1000 strokes : +- 1.0 Check tolerance
Tolerance cm3/1000 strokes : + 1.0	cm3/1000s. : + 4.0 Spreed Tolerance
Check tolerance cm3/1000S. : + 4.0	cm3/1000 strokes : 5.0 Check tolerance
Spreed	cm3/1000s. : 9.0
Tolerance cm3/1000 strokes : 5.0	CONTROL LEVER
Check tolerance cm3/1000S. : 9.0	control lever position degree : 88.0 tolerance degree : +- 4.0
Rated speed rpm : 550	ASSEMBLY GOVERNOR SETTING
Rack travel in mm: 4.10 Tolerance mm: + 0.10 Del. quantity	Rated speed rpm : 1070 Tolerance 1/min : +- 1 rack travel mm : 12.70
cm3/1000 strokes : 18.0 + Tolerance cm3/1000 strokes : + 3.0 + Cm3/1000 strokes : + 3.0	Rated speed rpm : 1110 Tolerance 1/min : +- 4
Check tolerance cm3/1000s. : +- 6.0	rack travel mm : 4.00
Spreed + Tolerance + cm3/1000 strokes : 8.0 +	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1300
Check tolerance cm3/1000S. : 12.0 +	2074
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1071 Tolerance 1/min : +- 1 rack travel mm : 12.70
WITH GOVERNOR	Rated speed rpm : 1111
GUIDE SLEEVE POSITION	Tolerance 1/min : +- 4 rack travel mm : 4.00
SOIDE SEEEVE FOSTITION	rack travel mm : 0.85 Tolerance mm : +- 0.55
control lever position degree : - 3 Rated speed rpm : 800	Tolerance mm : +- 0.55 Rated speed rpm : 1300
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Rated speed rpm : 1072 Tolerance 1/min : +- 1 rack travel mm : 12.70
FULL LOAD DELIVERY AT FULL LOAD STOP	Rated speed rpm : 1112 Tolerance 1/min : +- 4 rack travel mm : 4.00
Rated speed rpm : 1030	rack travel mm : 4.00

Tolerance mm Rated speed rpm	: +- 0.55 : 1300	‡	Tolerance mm	: + 0.10
		<del> </del>	rack travel mm	: 2.00
		+	Rated speed rpm	: 575
Rated speed rpm	: 1073	1	Tolerance 1/min	
Tolerance 1/min	: +- 1	1		
rack travel mm	: 12.70	1	SET IDLE AUXILIAR	Y SPRING
		1		., ., ., ., .,
Rated speed rom	• 1113	1	rack travel mm	2.00
Rated speed rpm Tolerance 1/min	· +- 4	1	Table et aree man	. 2.00
rack travel mm	4 00	1		
I dek el det lim	. 4.66	$\mathbf{I}$	TORQUE CONTROL	
mark though mm	. 0.85	T		• 1030
rack travel mm Tolerance mm Rated speed rpm	. 0.65	T	Rated speed rpm	: 13.70
Poterance min	. T 0.33	T	rack travel mm	
kated speed rpm	: 1300	<b>†</b>	Tolerance mm	: +- 0.05
		<b>T</b>	Dakad amaad saa	
	407/	<b>T</b>	Rated speed rpm	: 600
Rated speed rpm	: 1074	†	rack travel mm	: 14.70
Tolerance 1/min	: + 1	†	Tolerance mm	: +- 0.10
rack travel mm	: 12.70	+		
		+	Rated speed rpm rack travel mm Tolerance mm	: 900
Rated speed rpm	: 1114	+	rack travel mm	: 14.20
Tolerance 1/min	: +- 4	+	Tolerance mm	: <b>←</b> 0.10
rack travel mm	: 4.00	+		
		+		
rack travel mm	: 0.85	1	ANEROID/ALTITUDE	
Tolerance mm	: <b>←</b> 0.55	1	COMPENSATOR TEST	
Tolerance mm Rated speed rpm	1300	1	00/11/2/10/11/01/11/201	
nacea speed i pii	. 1300	1		
		I	SETTING	
Rated speed rpm	. 1075	${ m I}$	32111140	
Talanana 1/min	4	T	Datad annud ann	. 750
Tolerance 1/min	12 70	T	Rateu speed rpm	4000
rack travel mm	: 12.70	†	Rated speed rpm Pressure hPa	: 1000
	444	†	rack travel mm Tolerance mm	: 14.70
Rated speed rpm	: 1115	+	Tolerance mm	: <b>←</b> 0.15
Rated speed rpm Tolerance 1/min	: +- 4	+		
rack travel mm	: 4.00	+	Rated speed rpm	: 450
		+	Pressure hPa	: - : 12.40
rack travel mm	: 0.85	+	rack travel mm	: 12.40
Tolerance mm	: <del>+-</del> 0.55	+	Tolerance mm	: +- 0.15
Rated speed rpm		+		
,		+	MEASUREMENT	
		<del>  </del>		
LOW IDLE		1	Rated speed rpm	: 450
25.1. 2.5 2.5		1		
		1	Pressure hPa	: 750
control lever		1	rack travel mm	: 14.00
	· 71 በ	1	Tolerance mm	: + 0.15
position degree tolerance degree	· +- 4.0	1	TOTAL TOTAL THE	0.15
toterance degree	4.0	1	Pressure hPa	. 650
Setting point w/o	ut human enring		rack travel mm	
secong point w/o	ar namhar shi irid		Tolerance mm	
Dated aread are	. 100	T	TOTEL OF ITHE	כו .ט ייי
Rated speed rpm	. 100	Ť		
CDT has sub-	. > 40 50	†		
CRT mm min.	: > 19.50	†	FUEL BELTWEDY COLO	DACTED 207700
		+	FUEL DELIVERY CHAI	RACTERISTICS
Testing:		†		
	550	+		
Rated speed rpm			Aneroid pressure	4
rack travel mm	: 4.10	+	hPa	: 1000

Rated speed rpm Del. quantity	: 600
cm3/1000 strokes	: 240.0
Tolerance cm3/1000 strokes	: <del></del> 2.0
Check tolerance cm3/1000s. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
rack travel mm Tolerance mm	: 14.20 : + 0.10
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 170.0
cm3/1000 strokes	: <b>←</b> 1.0
Check tolerance cm3/1000s.	: +- 4.0
Spreed Tolerance	
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100
Del. quantity cm3/1000 strokes	: 220.0
Tolerance cm3/1000 strokes	: +- 15.0
Check tolerance cm3/1000S.	: <b>←</b> 19.0
31137 T0003.	
LOW IDLE	
Rated speed rpm	: 550
Rack travel in mm	
Tolerance mm Del. quantity	: +- 0.10
cm3/1000 strokes	: 18.0
Tolerance cm3/1000 strokes	: +- 3.0
Check tolerance cm3/1000s.	: <del>+</del> 6.0

Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 20.10.94 : ISO 4113

Combination No. : 0 402 744 800

Injection pump

Pump designation : PES4P120A320RS7312 : 0 412 724 800 EP type number

Governor

Governer design. : RQV400...1200PA1115

: -1K

Governer no.

: 0 421 815 406

Cust. part No. : 51.11103-7295

Customer-spec. information

Customer

: MAN

Motor

: D0824LFL02

Power KW

: 116.0

### TEST BENCH REQUIREMENTS

Inlet line

: 4.2

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve

: 1 417 413 025

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 103

Opening pressure

bar

208.5

Tolerance bar

Test lines

: 1 680 750 008

Outside diameter :

6.0

x inside diameter :

2.0

x length mm :

600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : + 1.0

Prestroke mm 4.45

Tolerance mm

: +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 15.00

Tolerance mm : + 0.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270

Tolerance : +- 0.30

Check

: + - 0.75tolerance °NW

Start of delivery mark

"NW after s.o.d. : 0.50

Barrel no. :

BASIC SETTING

Rated speed rpm : 1150

15.00 Rack travel in mm :

Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 214.0

		+ Rated speed rpm : 430
Tolerance		+ guide sleeve
cm3/1000 strokes	: +- 1.0	travel mm : 3.23 Tolerance mm : + 0.25
		+ Tolerance mm : + 0.25
Check tolerance		
cm3/1000s.	٠ ــــ ٨ ١	Rated speed rpm : 530
CIIS/ (UCUS.	. +- 4.0	
Spr <del>ee</del> d		travel mm : 4.25
		travel mm : 4.25 Tolerance mm : +- 0.25
Tolerance		+
cm3/1000 strokes	: 8.0	+ Rated speed rpm : 1500
		+ guide sleeve
Check tolerance	<del></del>	guide sleeve travel mm : 13.50
cm3/1000s.	• 12 በ	+ Tolerance mm : + 0.50
CIIS7 10003.	. 12.0	Toterance min . 1 0.30
		+ GUIDE SLEEVE POSITION
Rated speed rpm	: 400	+
		+
Rack travel in mm	: 5.00	+ control lever
Tolerance mm		
Del. quantity		position degree : - 1 Rated speed rpm : 1370
cm3/1000 strokes	: 30.0	1 Marca Speca (piir 1 1510
Tolerance	. 50.0	Rack travel in mm : 9.00
	. 70	
cm3/1000 strokes	: ← 3.0	† Tolerance mm : + 1.30
Check tolerance		+
cm3/1000S.	: <del>+-</del> 6.0	+
Spreed		
Tolerance		
cm3/1000 strokes	. 80	
Check tolerance		+ control lever
	: 12.0	
cm3/1000S.	: 12.0	position degree : 121.0
		tolerance degree : + 4.0
		+
(B) SETTING OF INJ	ECTION PUMP	+ RATED SPEED
WITH GOVERNOR		+ rack travel mm : 14.00
		Rated speed rpm : 1250
		+ Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVE	ı	Total and the training to the
GOIDE SEEEAE LIVAGE	_	rack travel mm : 4.00
Dated and and	. 1256	
Rated speed rpm	: 1200	Rated speed rpm : 1385
guide sleeve	45.45	+ Tolerance 1/min : +- 15
travel mm	: 10.49	†
Tolerance mm	: <b>←</b> 0.25	+ rack travel mm : 0.50
		+ Tolerance mm : +- 0.50
Rated speed rpm	: 400	Rated speed rpm : 1520
guide sleeve	,	
travel mm	: 3.06	$\perp$
	: + 0.25	$\mathbf{I}$
Tolerance mm	. — 0.25	T
	0.0	
	: 869	+ LOW IDLE
guide sleeve		+
travel mm	: 7.12	+
Tolerance mm	: <b>←</b> 0.25	control lever
. 0 . 0 . 0 . 1 . 1 . 1 . 1 . 1 . 1 . 1		position degree : 77.0
Dated another men	: 380	tolerance degree : + 4.0
Rated speed rpm	. 300	T cocerance degree : T 4.0
guide sleeve		†
travel mm	: 2.52	Setting point w/out bumper spring
Tolerance mm	: <b>←</b> 0.25	+
		Rated speed rpm : 325
		t contract the contract of the

CRT mm min.	•> 750	<u> </u>	Rated speed rpm	: > 320
Testing:	. 7 1.30	+	Check speed 1/min	: < 260
Rated speed rpm rack travel mm Tolerance mm	: 5.00	† †	Check speed 1/min  FUEL DELIVERY CHA	
			TOLE VELLYLIN SIN	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1150 : 15.00 : ← 0.05	‡	Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 1000
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 14.80 : +- 0.10	+	cm3/1000 strokes Tolerance cm3/1000 strokes	
Rated speed rpm rack travel mm Tolerance mm	: 13.70	‡	Check tolerance cm3/1000s.	: <b>←</b> 6.0
Rated speed rpm rack travel mm Tolerance mm		+	Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm	: 13.70
ANEROID/ALTITUDE COMPENSATOR TEST			Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: ← 3.0
SETTING		+	cm3/1000s.	: ← 6.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : 15.00		Aneroid pressure hPa Rated speed rpm Del. quantity	: – : 750
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	9.30	‡	cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: <b>←</b> 5.0
MEASUREMENT		‡	cm3/1000s. Spreed	: +- 8.0
Rated speed rpm	: 1150	†	Tolerance cm3/1000 strokes Check tolerance	: 8.0
Pressure hPa rack travel mm Tolerance mm	: 13.45	1	cm3/1000s.	: 12.0
Pressure hPa rack travel mm Tolerance mm	: 120 : 9.65	<del> </del>	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
Start interlock		<del></del> ‡	cm3/1000 strokes Check tolerance	: +- 1.0
Rated speed rpm	: < 280	Į	cm3/1000s.	: +- 4.0

Aneroid pressure

hPa : -

Rated speed rpm : 325

Del. quantity

cm3/1000 strokes : 60.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 10.70 Tolerance mm : + 0.30

Del. quantity

cm3/1000 strokes : 98.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. :  $\leftarrow$  19.0

# LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 30.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 31.03.98 Edition : ISO 4113 Test oil

Combination No. : 0 402 646 672

Injection pump

Pump designation : PE6P12DA32ORS7421 EP type number : 0 412 626 956

Governor

Governer design. : RQV275...1150PA1298K

Governer no. : 0 421 815 525

Cust. part No. : 1316185/1

Customer—spec. information

Customer : DAF

: PF 183 M Motor Power KW : 183.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity
min. L/h : 150
Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 har Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm :

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : + 1.0

Prestroke mm : 4.85 Tolerance mm : + 0.05 Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Tolerance : <del>+-</del> 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

850 Rated speed rpm :

Rack travel in mm: 11.35 Tolerance mm : + 0.05

		+ guide sleeve
Dal guantitu		travel mm : 3.85
Del. quantity cm3/1000 strokes	: 206.0	Tolerance mm : +- 0.25
<b>*.</b> •		D-+1
Tolerance	. 4.0	+ Rated speed rpm : 1480
cm3/1000 strokes	: +- 1.0	+ guide sleeve
		+ travel mm : 13.50
Check tolerance cm3/1000s.	: +- 4.0	+ Tolerance mm : ← 0.50
Spreed		+ GUIDE SLEEVE POSITION
Tolerance		+
cm3/1000 strokes	: 5.0	+ control lever
		position degree : - 1
Check tolerance		Rated speed rpm : 1343
cm3/1000s.	: 9.0	nated speed (pil) : 1545
CIIS/ 10005.	. 7.0	Rack travel in mm: 9.80
		1
		† Tolerance mm : + 2.70
		†
Rated speed rpm	: 275	
		+ FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 4.90	+
Tolerance mm		Rated speed rpm : 850
Del. quantity	•	+ Aneroid pressure
cm3/1000 strokes	. 16.0	
	: 10.0	
Tolerance	7.0	+ Del. quantity
cm3/1000 strokes	: <del>+-</del> 3.0	+ cm3/1000 strokes : 206.0
Check tolerance		+ Tolerance
cm3/1000s.	: ← 6.0	+ cm3/1000 strokes : +- 1.0
Spreed	•	+ Check tolerance
Tolerance		+ cm3/1000s. : + 4.0
cm3/1000 strokes	. 90	1
	; 0.0	+ Spreed
Check tolerance	40.0	+ Tolerance
cm3/1000s.	: 12.0	+ cm3/1000 strokes : 5.0
		+ Check tolerance
		+ cm3/1000s. : 9.0
(B) SETTING OF IN. WITH GOVERNOR	JECTION PUMP	
<del></del>		
		+ CONTROL LEVER
GUIDE SLEEVE TRAVE	EI	T SOLLINGE CEACH
GOIDE STEENE IKAN	<u>-</u>	control leves
	4300	t control lever
Rated speed rpm	: 1200	position degree : 118.0
guide sleeve		† tolerance degree : +- 4.0
travel mm	: 10.06	+
Tolerance mm	: +- 0.15	+ RATED SPEED
		rack travel mm : 10.05
Rated speed rpm	: 275	Rated speed rpm : 1190
guide sleeve	. 2.7	+ Tolerance 1/min : +- 5
	: 1.71	
travel mm		Check
Tolerance mm	: <del>+-</del> 0.20	+ speed 1/min : +- 10
Rated speed rpm	: 811	rack travel mm : 4.00
guide sleeve	•	+ Rated speed rpm : 1285
travel mm	: 6.79	+ Tolerance 1/min : +- 15
	: +- 0.25	
Tolerance mm	; - 0.23	+ Check
	450	+ speed 1/min : +- 20
Rated speed rpm	: 450	†
		+ rack travel mm : 0.70

Rated speed rpm	: 1450
LOW IDLE	
control lever position degree tolerance degree	: 72.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 7.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 4.90 : + 0.10
Rated speed rpm	: 325
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 850 : 11.35 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1130 : 11.05 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 11.15 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 800 : 11.15 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 650 : 10.45 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 9.55 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 11.05 : +- 0.10

Tolerance mm :  $\leftarrow$  0.70

ANEROID/ALT	TUDE
COMPENSATOR	<b>TEST</b>

# SETTING

Rated speed rpm	: 875
Pressure hPa	: 1500
rack travel mm	: 11.35
Tolerance mm	: +- 0.10
Rated speed rpm	: 875
Pressure hPa	: -
rack travel mm	: 8.10
Tolerance mm	: + 0.10

# MEASUREMENT

Rated speed rpm	:	875
Pressure hPa rack travel mm Tolerance mm	: +	400 10.50 - 0.05
Pressure hPa rack travel mm	:	200 9.00

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure	
hPa	: 1500
Rated speed rpm	: 1130
Del. quantity	
cm3/1000 strokes	: 184.0
Tolerance	
cm3/1000 strokes	: +- 2.0
Check tolerance	
cm3/1000s.	: <del>+-</del> 5.0
Spreed	
Tolerance cm3/1000 strokes	: 8.0
Check tolerance	. 6.0
cm3/1000s.	: 12.0
	. ,2.5
rack travel mm	: 11.15
Tolerance mm	: <b>←</b> 0.10
Aneroid pressure	
hPa	: -
Rated speed rpm	: 600
Del. quantity	
cm3/1000 strokes	: 138.0

Tolerance		
cm3/1000 strokes	: +-	1.0
Check tolerance		
cm3/1000s.	: +-	4.0
Spreed		
Tolerance		
cm3/1000 strokes	:	8.0
Check tolerance		
cm3/1000S.	:	12.0

# LOW IDLE

Rated speed rpm	:	275	
Rack travel in mm Tolerance mm Del. quantity	-	4.90 0.10	
cm3/1000 strokes	:	16.0	
Tolerance cm3/1000 strokes	: +-	3.0	
Check tolerance cm3/1000s.	: +-	6.0	
Spreed Tolerance cm3/1000 strokes	:	8.0	
Check tolerance cm3/1000s.	•	12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98 Test oil : ISO 4113

Combination No. : 0 402 646 887AB

Injection pump

Pump designation : PE6P120A720RS7188

: -10

EP type number : 0 412 626 924

Governor

Governer design. : RQV200...950PA725-7

Governer no. : 0 421 813 803

Cust. part No. : 1333122-1

Customer—spec. information Customer : SCANIA Motor : DSC 11 23

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 190 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

# Start of delivery mark

Tolerance : + 0.50 Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 700

		† Tolerance mm : +- 0.30
Rack travel in mm Tolerance mm	: 13.85 : + 0.05	Rated speed rpm : 350 guide sleeve travel mm : 2.70
Del. quantity cm3/1000 strokes	: 252.0	Tolerance mm : +- 0.30
Tolerance cm3/1000 strokes	: +- 1.0	+ Rated speed rpm : 1125 + guide sleeve + travel mm : 9.50 + Tolerance mm : +- 0.20
Check tolerance cm3/1000s.	: + 4.0	GUIDE SLEEVE POSITION
Spreed		†
Tolerance cm3/1000 strokes	: 8.0	control lever position degree : - 1 Rated speed rpm : 1150
Check tolerance cm3/1000s.	: 12.0	Rack travel in mm : 9.50 Tolerance mm : +- 2.50
Rated speed rpm	: 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm Tolerance mm Del. quantity	: 4.70 : ← 0.10	Rated speed rpm : 700 Aneroid pressure hPa : -
cm3/1000 strokes	: 16.0	Del. quantity
Tolerance cm3/1000 strokes	: <del></del> 3.0	+ cm3/1000 strokes : 252.0 + Tolerance
Check tolerance cm3/1000s.	: <del>+</del> 6.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
Spreed	0.0	+ cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes	: 4.0	+ Spreed + Tolerance
Check tolerance		+ cm3/1000 strokes : 8.0
cm3/1000s.	: 8.0	+ Check tolerance + cm3/1000s. : 12.0
(B) SETTING OF INJ WITH GOVERNOR	ECTION PUMP	
W2111 00761111011		CONTROL LEVER
GUIDE SLEEVE TRAVE	L	control lever
Rated speed rpm guide sleeve	: 1045	+ position degree : 60.0 + tolerance degree : + 4.0
travel mm	: 8.50	control lever
	: +- 0.10	+ position degree : 114.0 + tolerance degree : +- 4.0
Rated speed rpm guide sleeve	: 225	+ RATED SPEED
travel mm	: 1.40	rack travel mm : 12.80
Tolerance mm	: +- 0.20	+ Rated speed rpm : 995 + Tolerance 1/min : +- 5
Rated speed rpm guide sleeve	: 650	+ Check + speed 1/min : +- 10
travel mm	: 4.80	+

rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 1125
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : + 0.50
LOW IDLE	
control lever position degree tolerance degree	: 64.0 : + 4.0
control lever position degree tolerance degree	: 10.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 6.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 4.70 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.85 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 950 : 13.85 : +- 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm	: 500 : 1500 : 13.85

Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 9.60 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 270 : 10.90 : + 0.15
Pressure hPa rack travel mm Tolerance mm	: 440 : 11.90 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	· · · · · · · · · · · · · · · · · · ·
hPa Rated speed rpm	: – : 950
Del. quantity cm3/1000 strokes	: 237.0
Tolerance cm3/1000 strokes	: +- 4.0
Check tolerance cm3/1000s.	: ← 6.0
Aneroid pressure	
hPa Rated speed rpm	: – : 500
Del. quantity cm3/1000 strokes	
Tolerance	
cm3/1000 strokes Check tolerance	
cm3/1000s.	: ← 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm	: 100 : 9.60
rack travel mm Tolerance mm	: +- 0.20
Del. quantity cm3/1000 strokes Tolerance	: 136.0

: **←** 24.0

Tolerance

Check tolerance cm3/1000s.

cm3/1000 strokes : + 20.0

rack travel mm : 13.85 Tolerance mm : + 0.05

# LOW IDLE

Rated speed rpm	:	250
Rack travel in mm Tolerance mm	: +-	4.70 0.10
Del. quantity cm3/1000 strokes Tolerance	:	16.0
cm3/1000 strokes Check tolerance	: +-	3.0
cm3/1000s. Spreed	: +-	6.0
Tolerance cm3/1000 strokes Check tolerance	:	4.0
cm3/1000S.	:	8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 27.03.98 Test oil : ISO 4113

Combination No. : 0 402 646 937AB

Injection pump

Pump designation : PE6P12OA72ORS7188

: -100

EP type number : 0 412 626 925

Governor

Governer design. : RQV200...950PA725-7

Governer no. : 0 421 813 803

Cust. part No. : 1333121-1

Customer—spec. information Customer : SCANIA Motor : DSC11 21

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper

(RoBo diaphragm) : 3.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5Tolerance bar :  $\leftarrow$  0.1

Test nozzle holde

assembly : 1 688 901 104

Opening pressure

bar : 251.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.75 Tolerance mm : + 0.05

	+ guide sleeve
Del. quantity	travel mm : 2.70
cm3/1000 strokes : 220.0	+ Tolerance mm : +- 0.30
Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 1125 guide sleeve
	travel mm : 9.50
Check tolerance cm3/1000s. : +- 4.0	Tolerance mm : +- 0.20
Spreed	GUIDE SLEEVE POSITION
Tolerance	Ť
cm3/1000 strokes : 8.0	control lever position degree : - 1
Check tolerance	+ Rated speed rpm : 1150
cm3/1000s. : 12.0	+
	Rack travel in mm: 9.50
	+ Tolerance mm : ← 2.50
D. A	†
Rated speed rpm : 250	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 4.70	T FOLL LOAD DELIVERY AT FOLL LOAD STOP
Tolerance mm : +- 0.10	Rated speed rpm : 700
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 16.0	+ hPa : -
Tolerance	+ Del. quantity
cm3/1000 strokes : + 3.0	+ cm3/1000 strokes : 220.0
Check tolerance	+ Tolerance
cm3/1000s. : +- 6.0	+ cm3/1000 strokes : +- 1.0
Spreed	+ Check tolerance + cm3/1000S. : +- 4.0
Tolerance cm3/1000 strokes : 4.0	+ Spreed
Check tolerance	Tolerance
cm3/1000s. : 8.0	+ cm3/1000 strokes : 8.0
	+ Check tolerance
	+ cm3/1000s. : 12.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	‡
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	- CONTINUE CEVEN
	control lever
Rated speed rpm : 1045	position degree : 60.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 8.50	†
Tolerance mm : + 0.10	control lever position degree : 112.0
Rated speed rpm : 225	+ tolerance degree : + 4.0
guide sleeve	T total and degree 4.0
travel mm : 1.40	RATED SPEED
Tolerance mm : + 0.20	+ rack travel mm : 11.70
	Rated speed rpm : 995
Rated speed rpm : 650	+ Tolerance 1/min : + 5
guide steeve	+ Check
travel mm : 4.80	speed 1/min : +- 10
Tolerance mm : +- 0.30	+ rack travel mm : 4.00
Rated speed rpm : 350	Rated speed rpm : 1120
Marca Speca (piii . 350	Tolerance 1/min : +- 15
	1 1000101100 17111111 1 1 10

Check speed 1/min : +- 20 rack travel mm : 0.50 Tolerance mm : + 0.50 Rated speed rpm : 1250 LOW IDLE control lever position degree : 62.0 tolerance degree : +- 4.0 control lever position degree : 10.0 tolerance degree : +- 4.0 Setting point w/out bumper spring Rated speed rpm : 150 CRT mm min. :> 6.07Testing: Rated speed rpm : 250 rack travel mm : 4.70 : **←** 0.10 Tolerance mm Rated speed rpm : 275 TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 12.75
Tolerance mm : + 0.05 Rated speed rpm : 950 rack travel mm : 12.75
Tolerance mm : + 0.05 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 Pressure hPa : 1500
rack travel mm : 12.75
Tolerance mm : + 0.05 Rated speed rpm : 500 Pressure hPa : - rack travel mm : 9.60

Tolerance mm : + 0.20 **MEASUREMENT** Rated speed rpm : 500 Pressure hPa : 270 rack travel mm : 11.05 Tolerance mm :  $\leftarrow$  0.15 Pressure hPa : 440 rack travel mm : 12.00 Tolerance mm : + 0.05 FUEL DELIVERY CHARACTERISTICS Aneroid pressure hPa 950 Rated speed rpm : Del. quantity cm3/1000 strokes : 209.0 Tolerance cm3/1000 strokes : +- 4.0Check tolerance cm3/1000s. : +- 6.0 Aneroid pressure Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 120.0 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. :  $\leftarrow$  4.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 9.60 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 134.0 Tolerance cm3/1000 strokes : + 15.0Check tolerance cm3/1000s.: +- 19.0 LOW IDLE Rated speed rpm : 250

Rack travel in mm Tolerance mm	:	+-	4.70 0.10
Del. quantity cm3/1000 strokes	:		16.0
Tolerance cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+	6.0
Tolerance cm3/1000 strokes	:		4.0
Check tolerance cm3/1000S.	:		8.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 27.03.98 : ISO 4113

Combination No. : 0 402 946 020

Injection pump

Pump designation : PES6P120A320RS8038 EP type number : 0 412 926 025

Governor

Governer design. : RQV250...1000PA1239

: -2

Governer no.

: 0 421 814 168

Cust. part No. : 1369545

Customer-spec. information Customer : SCANIA

Motor

: DSC 9.11

TEST BENCH REQUIREMENTS

Inlet line : EHAB

Test oil inlet

temp. °C

Tolerance °C

: + 2.0

Overflow valve : 2 417 413 082

Inlet press. bar :

Tolerance bar : + 0.1

Overflow quantity

min. l/h

: 105

Tolerance l/h:  $\leftarrow$  15.0

Test nozzle holde

assembly

: 1 688 901 104

Opening pressure

bar

: 251.5

Tolerance bar : +- 1.5

Outside diameter : 6.0 x inside diameter : 2.0

Test lines : 1 680 750 008

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

: 4.00 Prestroke mm Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50

Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : <del>←</del> 0.75

Start of delivery blocking

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no.

: 1

BASIC SETTING

Rated speed rpm :

600

Deals travel in my 12.70	Rated speed rpm : 470
Rack travel in mm : 12.30 Tolerance mm : +- 0.05	Rated speed rpm : 470 guide sleeve
Toterance min . 4 0.05	travel mm : 4.09
Del. quantity	Tolerance mm : + 0.25
cm3/1000 strokes : 277.0	+
	Rated speed rpm : 1470
Tolerance	guide sleeve
$cm3/1000$ strokes : $\leftarrow$ 1.0	+ travel mm : 11.50
	Tolerance mm : + 0.50
Check tolerance cm3/1000s. : +- 9.0	†
cm3/1000s. : $\leftarrow$ 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	TOLL LOAD DELIVERY AT TOLL COAD STOT
	Rated speed rpm : 600
Toterance	+ Aneroid pressure
cm3/1000 strokes : 8.0	+ hPa : 1500
	+ Del. quantity
Check tolerance	+ cm3/1000 strokes : 277.0
cm3/1000s. : 12.0	+ Tolerance + cm3/1000 strokes : ← 1.0
	+ cm3/1000 strokes : +- 1.0 Check tolerance
	+ cm3/1000s. : +- 9.0
Rated speed rpm : 250	Spreed
nacea specia i più · · · · · · · · · · · · · · · · · · ·	Tolerance
Rack travel in mm : 7.70	+ cm3/1000 strokes : 8.0
Tolerance mm : +- 0.10	+ Check tolerance
Del. quantity	+ cm3/1000s. : 12.0
cm3/1000 strokes : 45.0	†
Tolerance	†
cm3/1000 strokes : +- 3.0 Check tolerance	CONTROL LEVER
cm3/1000s. : +- 6.0	I CONTROL LEVER
Spreed	control lever
Tolerance	position degree : 56.0
cm3/1000 strokes : 4.0	tolerance degree : +- 4.0
Check tolerance	+
cm3/1000s. : 8.0	+ control lever
	+ position degree : 119.0
(D) OFFERIO OF THEFETTON DING	tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	RATED SPEED
WITH GOVERNOR	rack travel mm : 11.30
	- Rated speed rpm : 1045
GUIDE SLEEVE TRAVEL	Tolerance 1/min : +- 5
	+ Check
Rated speed rpm : 1057	+ speed 1/min : +- 10
guide sleeve	+
travel mm : 7.89	rack travel mm : 4.00
Tolerance mm : +- 0.15	Rated speed rpm : 1225
Rated speed rpm : 250	+ Tolerance 1/min : +- 15 + Check
guide sleeve	speed 1/min : +- 20
travel mm : 1.33	- Opeca irmin
Tolerance mm : + 0.20	rack travel mm : 0.50
	+ Tolerance mm : + 0.50
Rated speed rpm : 748	+ Rated speed rpm : 1350
guide sleeve	†
travel mm : 6.17	†
Tolerance mm : ← 0.25	+

LOW IDLE

control lever

position degree : 89.0 tolerance degree : +- 4.0

control lever

position degree : tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 150

CRT mm min. :> 9.80

Testing:

250 Rated speed rpm rack travel mm 7.70 : + 0.10 Tolerance mm

300 Rated speed rpm :

TORQUE CONTROL

Rated speed rpm : 600 rack travel mm : 12.30 : +- 0.05 Tolerance mm

Rated speed rpm : 1000 rack travel mm : 12.30 : +- 0.10 Tolerance mm

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

500 Rated speed rpm : 1500 Pressure hPa 12.30 rack travel mm : : +- 0.05 Tolerance mm

500 Rated speed rom Pressure hPa : 10.80 rack travel mm :

: +- 0.20 Tolerance mm

**MEASUREMENT** 

500 Rated speed rpm

Pressure hPa 330 rack travel mm : 11.20 Tolerance mm : **←** 0.15

: 600 Pressure hPa 11.90 rack travel mm : ← 0.05 Tolerance mm

Start interlock

Rated speed rpm : < 190 : > Rated speed rpm 150

Check

speed 1/min : < 210

Check

speed 1/min : > 130

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1500 Rated speed rpm : 1000

Del. quantity

cm3/1000 strokes : 278.0

Tolerance

cm3/1000 strokes : +- 4.0

Check tolerance

cm3/1000s. : +- 9.0

Aneroid pressure

hPa Rated speed rpm : 500

Del. quantity

cm3/1000 strokes : 210.0

l'alerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s. : <del>+-</del> 7.0

STARTING FUEL DELIVERY

Rated speed rpm :

Rated speed . rack travel mm : 20.50 : + 0.50 100

Del. quantity

cm3/1000 strokes : 260.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  20.0

Check tolerance

cm3/1000s. : +- 24.0

LOW IDLE

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Rated speed rpm	:		250
Rack travel in mm Tolerance mm	:	+-	7.70 0.10
Del. quantity cm3/1000 strokes Tolerance	:		45.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes Check tolerance	:		4.0
cm3/1000s.	:		8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 28,10,94 : ISO 4113

Combination No. : 0 401 646 002

Injection pump

Pump designation : PES6R120/720LS1505 EP type number : 0 411 626 004

Governor

Governer design. : RQV300...1100R3K

Governer no. : 0 421 415 004

Cust. part No. : 51.11103-7234

Customer-spec. information

Customer : MAN Motor

: D2866LE401

Power KW

: 440.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C

40

Tolerance °C

: +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar :

1.5

Tolerance bar :  $\leftarrow$  0.1

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

X	Length mm : 600
RI	EMARKS
Se	A) INJECTION PUMP SETTING VALUES et equal delivery quant. er values
 B/	ASIC SETTING
	S) SETTING OF INJECTION PUMP TH GOVERNOR
_	

End of test specification sheet

x inside diameter: 3.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 30.03.98 : ISO 4113

Combination No. : F 000 409 208

Injection pump

Pump designation : PES6A100b320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C969R

Governer no. : F 000 420 702

Cust. part No. : 3353232

Customer-spec. information Customer : CUMMINS : 6 CT Motor : 120.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : ← 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

# **REMARKS**

(A) INJECTION PUMP SETTING VALUES Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85 Tolerance mm : ← 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery blocking

°NW after s.o.d. : 10.00 : +- 0.10 Tolerance

Check

: <del>+-</del> 0.23 tolerance °NW

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

travel : 10.50 Tolerance mm : +- 1.50 Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100	
Rack travel in mm : 12.25 Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 118.0	Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 118.0
Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Check tolerance cm3/1000s. : +- 3.0	cm3/1000S. : + 3.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 3.5 Check tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
	control lever
Poted aread pro 1 450	position degree : 90.0
Rated speed rpm : 450	tolerance degree : +- 4.0
Rack travel in mm: 5.10	RATED SPEED
Tolerance mm : + 0.10 +	rack travet mm : 11.30
Del. quantity	Rated speed rpm : 1150
cm3/1000 strokes : 12.5	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1225
cm3/1000S. : + 4.5 Spreed	Tolerance 1/min : + 15
Tolerance + cm3/1000 strokes : 5.5 +	rack travel mm : 0.85 Tolerance mm : + 0.55
cm3/1000 strokes : 5.5 + Check tolerance +	Tolerance mm : +- 0.55 Rated speed rpm : 1350
cm3/1000s. : 9.0	nated speed (piii . 1330
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR +	LOW IDLE
<u> </u>	control lever
GUIDE SLEEVE POSITION +	position degree : 67.0
<u> </u>	tolerance degree : + 4.0
control lever position degree : - 3	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 450
7.1.4	rack travel mm : 4.60
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	Tolerance mm : + 0.10  Rated speed rpm : 100
governor spring	Rated speed rpm : 100
pre-tension +	CRT mm min. : > 1.00
click setting x : 2.50 +	

# Testing:

Rated speed rpm : 450 rack travel mm 5.10 : + - 0.10Tolerance mm

2.00 rack travel mm : Rated speed rpm : 600 Tolerance 1/min : +-30

TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 12.25 : +- 0.05 Tolerance mm

Rated speed rpm : 500 rack travel mm : 12.30 rack travel mm : : **←** 0.10 Tolerance mm

400 Rated speed rpm : 12.85 rack travel mm : : +- 0.25 Tolerance mm

# STARTING FUEL DELIVERY

Rated speed rpm : 100 20.00 rack travel mm : : +- 1.00 Tolerance mm

Del. quantity

cm3/1000 strokes : 135.0

Tolerance

cm3/1000 strokes : +- 8.0

Check tolerance

cm3/1000s. : +- 11.0

# LOW IDLE

Rated speed rpm : 450

5.10 Rack travel in mm : Tolerance mm : **←** 0.10

Del. quantity

12.5 cm3/1000 strokes :

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

4.5 cm3/1000s. Spreed

Tolerance

cm3/1000 strokes : 5.5 Check tolerance

cm3/1000s. : 9.0

End of test specification sheet

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#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.03.98 Test oil : ISO 4113

Combination No. : F 000 409 209

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C970R

Governer no. : F 000 420 703

Cust. part No. : 3352892

Customer—spec. information
Customer : CUMMINS
Motor : 6 CT
Power KW : 120.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 11.00

Tolerance : + 0.10

Check

tolerance °NW : +- 0.23

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50
Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1000	<del></del>
Rack travel in mm: 10.65 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1000  Aneroid pressure
Del. quantity cm3/1000 strokes : 92.5	hPa : - Del. quantity cm3/1000 strokes : 92.5
Tolerance cm3/1000 strokes : + 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : +- 3.0	cm3/1000s. : +- 3.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 3.5 Check tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000S. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 450	control lever position degree : 86.0 tolerance degree : +- 4.0
Rack travel in mm: 5.10  Tolerance mm: + 0.10  Del. quantity cm3/1000 strokes: 12.5  Tolerance cm3/1000 strokes: + 2.0  Check tolerance cm3/1000s. : + 4.5  Spreed  Tolerance cm3/1000 strokes: 5.5  Check tolerance cm3/1000 strokes: 9.0  (B) SETTING OF INJECTION PUMP WITH GOVERNOR	RATED SPEED rack travel mm : 9.60 Rated speed rpm : 1045 Tolerance 1/min : + 5  rack travel mm : 4.00 Rated speed rpm : 1085 Tolerance 1/min : + 15  rack travel mm : 0.85 Tolerance mm : 0.55 Rated speed rpm : 1250  LOW IDLE
WITH GOVERNOR	control lever
GUIDE SLEEVE POSITION	position degree : 67.0 tolerance degree : + 4.0
control lever position degree : - 3	Setting point w/out bumper spring
Rated speed rpm : 800  Rack travel in mm : 0.50	Rated speed rpm : 450 rack travel mm : 4.60 Tolerance mm : +- 0.10
Tolerance mm : + 0.20	Rated speed rpm : 100
governor spring pre-tension click setting x : 2.50	CRT mm min. : > 19.00

# Testing:

Rated speed rpm	:	450
rack travel mm	:	5.10
Tolerance mm	: +	- 0.10

rack travel mm	:		2.00
Rated speed rpm	:		600
Tolerance 1/min	:	+-	30

# TORQUE CONTROL

Rated speed rpm	:	1	1000
rack travel mm	:		10.65
Tolerance mm	:	+-	0.05

Rated speed rpm	:	500
rack travel mm	:	11.85
Tolerance mm	: -	→ 0.05

Rated speed rpm	:	700
rack travel mm	:	11.45
Tolerance mm	: +	-0.05

Rated speed m	om :		850
rack travel m	n :		11.00
Tolerance mm	:	+-	0.10

### FUEL DELIVERY CHARACTERISTICS

# Aneroid pressure

hPa	:	_
Rated speed rpm	:	500
Del quantity		

Del. quantity cm3/1000 strokes : 97.5

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : **←** 4.0

### Aneroid pressure

hPa	:		_
Rated speed rpm	:		700
rack travel mm	:		11.45
Tolerance mm	:	+-	0.05
Del. quantity			
cm3/1000 strokes	:		103.0
Tolerance			
cm3/1000 strokes	:	+-	2.0
Check tolerance			
cm3/1000s	•	+-	4.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.00
Tolerance mm	:	+-	1.00
Del. quantity			
cm3/1000 strokes	:		135.0
Tolerance			
cm3/1000 strokes	:	+-	8.0
Check tolerance			
cm3/1000s	•	+-	11 0

LOW IDLE			
Rated speed rpm	:	450	
Rack travel in mm Tolerance mm Del. quantity		5.10 0.10	
cm3/1000 strokes Tolerance	:	12.5	
cm3/1000 strokes Check tolerance	: +-	2.0	
cm3/1000S. Spreed Tolerance	: +-	4.5	
<b>—</b> 14.000	:	5.5	
cm3/1000s.	:	9.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 30.03.98 : ISO 4113

Combination No. : F 000 409 210

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C971R

Governer no. : F 000 420 704

Cust. part No. : 3354419

Customer-spec. information Customer : CUMMINS : 6 CT Motor Power KW : 120.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

: +- 0.75 tolerance °NW

Start of delivery blocking

\*NW after s.o.d. : 11.00

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.23

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel : 10.50
Tolerance mm : + 1.50 Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100	
Rack travel in mm: 11.35 Tolerance mm: + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1100  Aneroid pressure
Del. quantity cm3/1000 strokes : 107.0	hPa : — Del. quantity cm3/1000 strokes : 107.0
Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000S. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 3.5 Check tolerance
Tolerance cm3/1000 strokes : 3.5	cm3/1000S. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 89.0 tolerance degree : +- 4.0
+	•
Rack travel in mm: 5.60 + Tolerance mm: + 0.10 +	RATED SPEED rack travel mm : 10.30
Del. quantity	Rated speed rpm : 1145
cm3/1000 strokes : 16.0	Tolerance 1/min : +- 5
Tolerance	
cm3/1000 strokes : + 2.0 + Check tolerance	rack travel mm : 4.00 Rated speed rpm : 1190
cm3/1000S. : +- 4.5	Tolerance 1/min : +- 15
Spreed	70 CCT MITTO TY III TO
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5	Tolerance mm : + 0.55
Check tolerance + cm3/1000s. : 9.0 +	Rated speed rpm : 1350
CIIS/10003	
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	LOW IDLE
	control lever
GUIDE SLEEVE POSITION	position degree : 66.0 tolerance degree : +- 4.0
control lever	Setting point w/out bumper spring
position degree : -3 + Rated speed rpm : 800 +	Rated speed rpm : 400
Thated speed (pill . 000	rack travel mm : 5.10
Rack travel in mm: 0.50	Tolerance mm : ← 0.10
Tolerance mm : + 0.20	Rated speed rpm : 100
governor spring +	Rated speed rpm : 100
pre-tension +	CRT mm min. : > 19.00
click setting $x$ : 2.50 $+$	

### Testing:

Rated speed rpm	:	400
rack travel mm	:	5.60
Tolerance mm	: +	- 0.10
		2.00

rack travel mm	: 2.00
Rated speed rpm	: 595
Tolerance 1/min	: +- 30

TORQUE	CONTROL	
Dottool .	aread arm	

Rated speed rpm	•	- 1	100
rack travel mm			11.35
Tolerance mm	:	+-	0.05

Rated speed rpm	:		700
rack travel mm	:		12.90
Tolerance mm	:	+-	0.10

Rated speed rpm	:	900
rack travel mm	:	12.20
Tolerance mm	: -	− 0.10

### FUEL DELIVERY CHARACTERISTICS

# Aneroid pressure

hPa			:	_
Rated	speed	rom	:	700

Del. quantity

cm3/1000 strokes : 130.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. : +- 4.0

### STARTING FUEL DELIVERY

Rated speed rpm	:	100
rack travel mm	:	20.00
Tolerance mm	: -	⊢ 1.00
Del. quantity		

cm3/1000 strokes : 135.0 Tolerance

cm3/1000 strokes :  $\leftarrow$  8.0

Check tolerance cm3/1000s.

: +- 11.0

LOW IDLE

Rated speed rpm : 400

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Rack travel in mm Tolerance mm	:	+-	5.60 0.10
Del. quantity cm3/1000 strokes	:		16.0
Tolerance cm3/1000 strokes Check tolerance	:	+-	2.0
cm3/1000s.	:	+-	4.5
Tolerance cm3/1000 strokes			5.5
Check tolerance	•		ر.ر
cm3/1000s.	:		9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 30.03.98 Edition Test oil : ISO 4113

Combination No. : F 000 409 211

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governer design. : RSV400...1100A2C972R

Governer no. : F 000 420 705

Cust. part No. : 3352893

Customer-spec. information Customer : CUMMINS Motor : 6 CT Power KW : 120.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : Tolerance mm : + 2.85 : + 0.05 Check

tolerance mm

: +- 0.10

Rack travel in mm: 10.50 Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 11.00

: +- 0.10 Tolerance

Check

tolerance °NW : +- 0.23

Barrel no. : 1

Beginning of delivery differende

and maximum rack

Tolerance mm : + 1550 Difference ° CS : 3.50

BASIC SETTING

Rated speed rpm : 1100 +	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 10.25 Tolerance mm : + 0.05	Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 88.5	Aneroid pressure hPa : - Del. quantity
Tolerance	cm3/1000 strokes : 88.5 Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s. : + 3.0	Check tolerance cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 3.5
Tolerance cm3/1000 strokes : 3.5	Check tolerance cm3/1000s. : 8.0
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 89.9 tolerance degree : +- 4.0
+	-
Rack travel in mm : 5.60 + Tolerance mm : + 0.10 + Del. quantity +	RATED SPEED rack travel mm : 9.20 Rated speed rpm : 1145
cm3/1000 strokes : 16.0 +	Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0 + Check tolerance cm3/1000s. : + 4.5	rack travel mm : 4.00 Rated speed rpm : 1185 Tolerance 1/min : +- 15
Spreed +	rack travel mm : 0.85
cm3/1000 strokes : 5.5 + Check tolerance cm3/1000s. : 9.0 +	Tolerance mm : +- 0.55 Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	LOW IDLE
GUIDE SLEEVE POSITION	control lever position degree : 66.0 tolerance degree : +- 4.0
control lever position degree : - 3	Setting point w/out bumper spring
Rated speed rpm : 800	Rated speed rpm : 400 rack travel mm : 5.10
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Tolerance mm : +- 0.10  Rated speed rpm : 100
governor spring pre-tension click setting x : 2.50	CRT mm min. : > 19.00

# Testing:

Rated speed rpm rack travel mm Tolerance mm	: : +-	400 5.60 0.10
		2 00

rack travel mm	:	2.00
Rated speed rpm	:	595
Tolerance 1/min	:	+- 30

# TORQUE CONTROL

Rated speed rpm	:	1	100
rack travel mm	:		10.25
Tolerance mm	:	+-	0.05

Rated speed rpm	:	500
rack travel mm	:	12.20
Tolerance mm	: +	-0.10

Rated speed rpm	:	750
rack travel mm	:	12.20
Tolerance mm	: +	- 0.10

Rated speed rpm	:	950
rack travel mm	:	11.40
Tolerance mm	: +	- 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid	pressure
1.0	

hPa	:	-
Rated speed rpm	:	500
Del. quantity		
cm3/1000 strokes	:	103.0
Tolerance		
cm3/1000 strokes	: +	- 2.0
Check tolerance		
cm3/1000s.	: +	<del>-</del> 4.0

# Aneroid pressure

hPa	:		-
Rated speed rpm	:		<b>75</b> 0
rack travel mm	:		12.20
Tolerance mm	:	+-	0.10
Del. quantity			
cm3/1000 strokes	:		116.0
Tolerance			
cm3/1000 strokes	:	+-	2.0
Check tolerance			
cm3/1000s.	:	+-	4.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.00
Tolerance mm	:	+-	1.00
Del. quantity			
cm3/1000 strokes	:		135.0
Tolerance			
cm3/1000 strokes	:	+-	8.0
Check tolerance			
cm3/1000S.	:	+-	11.0

# LOW IDLE

FOM INFE				
Rated speed rpm	:		400	
Rack travel in mm Tolerance mm Del. quantity	-		5.60 0.10	
cm3/1000 strokes Tolerance	:		16.0	
cm3/1000 strokes Check tolerance	:	+-	2.0	
cm3/1000S. Spreed Tolerance	:	+	4.5	
cm3/1000 strokes Check tolerance	:		5.5	
cm3/1000s.	:		9.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.04.98 : ISO 4113

Combination No. : F 000 409 203

Injection pump

Pump designation : PES6A95D410RS2923 EP type number : F 000 400 401

Governor

Governer design. : RQV300...1300AB1326L

Governer no. : F 000 420 302

Cust. part No. : A 028 074 36 02

Customer—spec. information

Customer : MB8

Motor

: OM 366LA/EuroI

Power KW

: 150.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

: +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm Tolerance mm

3.20 : +- 0.05

Check

tolerance mm

: + 0.10

Rack travel in mm : 19.00 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes : 97.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

cm3/1000s.

: +- 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	control lever position degree : - 1
Check tolerance cm3/1000s. : 8.0	Rated speed rpm : 1366
	Rack travel in mm: 16.50 Tolerance mm: + 1.30
Rated speed rpm : 300	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : 6.60	+
Tolerance mm : + 0.10	+ Rated speed rpm : 1300
Del. quantity	+ Aneroid pressure
cm3/1000 strokes : 13.0	+ hPa : 900
Tolerance cm3/1000 strokes : +- 2.0	+ Del. quantity + cm3/1000 strokes : 97.0
Check tolerance	+ Tolerance
cm3/1000s. : +- 4.5	+ cm3/1000 strokes : + 1.0
Spreed	+ Check tolerance
Tolerance	+ cm3/1000s. : + 3.0
cm3/1000 strokes : 5.5	+ Spreed
Check tolerance	+ Tolerance
cm3/1000s. : 9.0	- cm3/1000 strokes : 3.5
	+ Check tolerance
(D) CETTING OF THIS COTTON DIME	+ cm3/1000s. : 8.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	<u>†</u>
MILL GOACKIAOK	I
	+ CONTROL LEVER
GUIDE SLEEVE TRAVEL	+
	+ control lever
Rated speed rpm : 1354	position degree : 62.0
guide sleeve	+ tolerance degree : +- 4.0
travel mm : 8.35	†
Tolerance mm : +- 0.15	control lever
Rated speed rpm : 300	<pre>position degree : 113.0 tolerance degree : +- 4.0</pre>
guide sleeve	T toterance degree : 1- 4.0
travel mm : 1.02	RATED SPEED
Tolerance mm : + 0.20	+ rack travel mm : 12.50
	+ Rated speed rpm : 1345
Rated speed rpm : 974	+ Tolerance 1/min : + 5
guide sleeve	†
travel mm : 6.06	rack travel mm : 4.00
Tolerance mm : +- 0.25	+ Rated speed rpm : 1520 + Tolerance 1/min : + 15
Rated speed rpm : 590	+ Tolerance 1/min : +- 15
guide sleeve	rack travel mm : 0.50
travel mm : 3.50	+ Tolerance mm : + 0.50
Tolerance mm : + 0.25	Rated speed rpm : 1640
	+
Rated speed rpm : 1710	+
guide sleeve	+
travel mm : 11.50	1011 701 5
Tolerance mm : + 0.50	+ LOW IDLE +
	+
GUIDE SLEEVE POSITION	control lever
	position degree : 73.0
•	+ tolerance degree : +- 4.0

		+ Rated sp
control lever		+
position degree tolerance degree	: 21.0	+ Check
tolerance degree	: +- 4.0	→ speed 1/
		Check
Satting point w/	out bumper spring	+ speed 1/
setting point w/	out bumper spring	T speed 17
1	400	Ť
Rated speed rpm	: 100	† <del></del>
		+ FUEL DEL
CRT mm min.	: > 9.00	+
		+
Testing:		+ Aneroid
		+ hPa
Rated speed rpm	: 300	Rated sp
rack travel mm	. 440	+ Del. qua
Tack travet (IRI)	. 0.00	
Tolerance mm	: +- 0.10	+ cm3/1000
		+ Tolerand
Rated speed rpm	: 355	+ cm3/1000
		+ Check to
		- 🗎 cm3/1000
TORQUE CONTROL		Spreed
Rated speed rpm	• 1300	+ Tolerand
rack travel mm	: 13.45	cm3/1000
Tolerance mm	. 13.43	
loterance mm	: +- 0.05	+ Check to
		+ cm3/1000
Rated speed rpm rack travel mm	: 750	+
rack travel mm	: 13.45	+
Tolerance mm	: <b>←</b> 0.05	+
		→ STARTING
		. 1
ANEROID/ALTITUDE		Rated sp
COMPENSATOR TEST		+ rack tra
COMPENSATOR TEST		Tolerance
		+ Del qua
SETTING		+ cm3/1000
		+ Tolerand
Rated speed rpm	: 500	+ cm3/1000
Pressure hPa	: 900	+ Check to
rack travel mm	: 13.50	+ cm3/1000:
Tolerance mm	: +- 0.05	
10 COLUMN OF THE		1
Dated speed non	. 500	T
Rated speed rpm	: 500	Ţ
Pressure hPa	-	1
		+ LOW IDLE
MEASUREMENT		+
		+ Rated sp
Rated speed rpm	: 500	+
	<del>-</del>	+ Rack trav
Pressure hPa	: 510	+ Tolerance
	: 2.90	Del. quar
rack travel mm		
Tolerance mm	: <b>+</b> 0.10	+ cm3/1000
		+ Tolerance
Pressure hPa	: 270	+ cm3/1000
rack travel mm	: 1.30	+ Check to
Tolerance mm	: +- 0.10	+ cm3/1000s
		Spreed
<del></del>		Tolerance
Start interlock		- cm3/1000
start intertock		
<b>.</b>		+ Check to
Rated speed rpm	: > 100	+ cm3/1000s

Rated speed rpm	: < 210
Check speed 1/min	: > 80
Check speed 1/min	: < 230
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	•
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes	: 49.0
cm3/1000 strokes Check tolerance	: +- 1.0
cm3/1000S. Spreed	: <del>-</del> 3.0
Tolerance cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 8.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm	: 100 : 14.20 : + 0.10
Del quantity cm3/1000 strokes	: 108.0
Tolerance cm3/1000 strokes Check tolerance	: <b>←</b> 7.5
cm3/1000s.	: <b>←</b> 10.0
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm Tolerance mm	: 6.60 : +- 0.10
Del. quantity cm3/1000 strokes Tolerance	: 13.0
cm3/1000 strokes Check tolerance	: <b>←</b> 2.0
cm3/1000S. Spreed	: ← 4.5
Tolerance cm3/1000 strokes	: 5.5
Check tolerance cm3/1000s.	: 9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.04.98 Edition : ISO 4113 Test oil

Combination No. : F 000 409 212

Injection pump

Pump designation : PES6A95D410RS2923 EP type number : F 000 400 401

Governor

Governer design. : RQV300...1300AB1326L

Governer no. : F 000 420 302

Cust. part No. : A 028 074 51 02

Customer-spec. information

Customer : MBB

: OM 366LA/EuroI Motor

: 150.0 Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C Tolerance °C : + 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm 3.20 : +- 0.05 Tolerance mm

Check

tolerance mm : **←** 0.10

Rack travel in mm : 19.00 : +- 1.50 Tolerance mm

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.45

Tolerance mm : **←** 0.05

Del. quantity

cm3/1000 strokes : 97.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  1.0

Check tolerance

: +cm3/1000s. 3.0

Spreed

Tolerance cm3/1000 strokes : 3.5	- - control lever - position degree : — 1
Check tolerance cm3/1000s. : 8.0	- Rated speed rpm : 1366
	- Rack travel in mm : 16.50 - Tolerance mm : +- 1.50
4	•
Rated speed rpm : 300	- FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 6.60	-
Tolerance mm : + 0.10	- Rated speed rpm : 1300
Del. quantity	- Aneroid pressure
cm3/1000 strokes : 13.0	- hPa : 900
Tolerance +	- Del. quantity
cm3/1000 strokes : + 2.0	- cm3/1000 strokes : 97.0
Check tolerance	- Tolerance
cm3/1000s. : +- 4.5	- cm3/1000 strokes : + 1.0
Spreed	Check tolerance
Tolerance +	- cm3/1000s. : +- 3.0
cm3/1000 strokes : 5.5	- Spreed
Check tolerance + cm3/1000s. : 9.0 +	- Tolerance - cm3/1000 strokes : 3.5
Cm3/10003 9.0	Check tolerance
	- cm3/1000s. : 8.0
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	•
+	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	•
+	control lever
Rated speed rpm : 1354	position degree : 113.0
guide sleeve	tolerance degree : +- 4.0
travel mm : 8.35	DATER CREEK
Tolerance mm : + 0.15	RATED SPEED rack travel mm : 12.50
Rated speed rpm : 300	Rated speed rpm : 1345
guide sleeve	Tolerance 1/min : + 5
travel mm : 1.02	
Tolerance mm : + 0.20	rack travel mm : 4.00
+	Rated speed rpm : 1520
Rated speed rpm : 974	Tolerance 1/min : +- 15
guide sleeve	
travel mm : 6.06	rack travel mm : 0.50
Tolerance mm : +- 0.25	Tolerance mm : +- 0.50
Det d as a d as a	Rated speed rpm : 1640
Rated speed rpm : 590	
guide sleeve + travel mm : 3.50 +	
travel mm : 3.50 + Tolerance mm : + 0.25	
Toterance min : += 0.23	LOW IDLE
Rated speed rpm : 1710	FOM INFF
guide sleeve	
travel mm : 11.50	control lever
Tolerance mm : + 0.50	position degree : 73.0
+	tolerance degree : + 4.0
+	
GUIDE SLEEVE POSITION +	Setting point w/out bumper spring
1	

Rated speed rpm : 100

CRT mm min.	: > 9.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.60 : + 0.10
Rated speed rpm	: 355
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 13.45 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.45 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 900 : 13.50 : ← 0.05
Rated speed rpm Pressure hPa	: 500 : –
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 270 : 1.20 : ← 0.10
Pressure hPa rack travel mm Tolerance mm	: 510 : 2.80 : + 0.10
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 210
Check speed 1/min Check	: > 80
speed 1/min	: < 230

FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	: 54.0
cm3/1000 strokes	: +- 1.0
Check tolerance cm3/1000S.	: +- 3.0
Spreed Tolerance	
cm3/1000 strokes	: 3.5
Check tolerance cm3/1000S.	: 8.0
STARTING FUEL DEL	TVEDY
	400
Rated speed rpm rack travel mm	: 100 : 14.20
Tolerance mm	: ← 0.10
Del. quantity cm3/1000 strokes	: 108.0
Tolerance cm3/1000 strokes	: <del></del> 7.5
Check tolerance	
cm3/1000S.	: +- 10.0
LOW IDLE	
Rated speed rpm	: 300
Rack travel in mm	
Tolerance mm Del. quantity	
cm3/1000 strokes Tolerance	: 13.0
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000s.	: <b>←</b> 4.5
Spreed Tolerance	
cm3/1000 strokes	: 5.5
Check tolerance cm3/1000s.	: 9.0
-	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 27.03.98 : ISO 4113

Combination No. : 0 400 864 103

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design: : RSV325...1250A5C871L

Governer no. : 0 420 232 626

Cust. part No. : 0423 1876 KY

Customer-spec. information

Customer : KHD-DMI

Motor

: BF4L 913

Power KW

: 78.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C

40

Tolerance °C

2.0

Overflow valve

: 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly

: 0 681 343 009

Opening pressure

bar

173.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 014

Outside diameter :

6.0

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm

3.00

Tolerance mm

: +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm :  $\leftarrow$  1.50

Firing order : 1-3-4-2

Phasing

: 0-90-180-270

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50

Tolerance mm : +- 0.05

Del. quantity

cm3/1000 strokes :

87.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s.

: + 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

+	
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
+	control lever
725	position degree : 102.0
Rated speed rpm : 325	tolerance degree : +- 4.0
Rack travel in mm: 9.60	RATED SPEED
Tolerance mm : + 0.10 +	rack travel mm : 12.50
Del. quantity + cm3/1000 strokes : 14.0 +	Rated speed rpm : 1295 Tolerance 1/min : +- 5
Tolerance	rocerance minimi.
cm3/1000 strokes : + 2.0	rack travel mm : 4.00
Check tolerance + 4.5 + 4.5	Rated speed rpm : 1355 Tolerance 1/min : +- 15
Spreed +	Total ance Tribitis . The Total
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 5.5 + Check tolerance	Tolerance mm : +- 0.55 Rated speed rpm : 1565
cm3/1000s. : 9.0	Rated speed rpm : 1565
	rack travel mm : 4.00
	Rated speed rpm : 1415
(B) SETTING OF INJECTION PUMP +	Tolerance 1/min : +- 15
WITH GOVERNOR	
+	
GUIDE SLEEVE POSITION	LOW IDLE
GOIDE SEELER FOSTITORY	
l l	
+	control Lavon
control lever	control lever
control lever position degree : FREE Rated speed rpm : 800	control lever position degree : 69.0 tolerance degree : +- 4.0
position degree : FREE + Rated speed rpm : 800 +	position degree : 69.0 tolerance degree : +- 4.0
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50	position degree : 69.0
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20	position degree : 69.0 tolerance degree : + 4.0 Setting point w/out bumper spring  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0 Setting point w/out bumper spring  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : -	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0 Tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : + 1.0	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 605
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 605
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 605 Tolerance 1/min : + 30
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance cm3/1000 strokes : 3.5	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 605 Tolerance 1/min : + 30
position degree : FREE Rated speed rpm : 800  Rack travel in mm : 0.50 Tolerance mm : + 0.20  governor spring pre-tension click setting x : 3.00  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity cm3/1000 strokes : 87.0  Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 3.0 Spreed Tolerance	position degree : 69.0 tolerance degree : + 4.0  Setting point w/out bumper spring  Rated speed rpm : 325 rack travel mm : 9.10 Tolerance mm : + 0.10  Rated speed rpm : 100  CRT mm min. : > 19.50  Testing:  Rated speed rpm : 325 rack travel mm : 9.60 Tolerance mm : + 0.10  rack travel mm : 2.00 Rated speed rpm : 605 Tolerance 1/min : + 30

Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.20 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.90 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1400 : 14.20 : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 13.30 : + 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 300 : 13.70 : + 0.05
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 750 : 13.90 : + 0.10 : 85.0 : + 5.0 : + 3.0 : 6.0 : 8.0

H03

Del. quantity cm3/1000 strokes	:	68.0
Tolerance cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000s.	: +-	4.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.25
Tolerance mm	:	+-	0.75
Del. quantity			
cm3/1000 strokes	:		120.0
Tolerance			
cm3/1000 strokes	:	+-	7.5
Check tolerance			
cm3/1000s.	:	+-	10.0

# LOW IDLE

FOM TDEF				
Rated speed rpm	:		325	
Rack travel in mm Tolerance mm Del. quantity		+	9.60 0.10	
cm3/1000 strokes Tolerance	:		14.0	
cm3/1000 strokes Check tolerance	:	+-	2.0	
cm3/1000s. Spreed Tolerance	:	+-	4.5	
cm3/1000 strokes Check tolerance	:		5.5	
cm3/1000s.	:		9.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. 

: 27.03.98 Edition : ISO 4113 Test oil

Combination No. : 0 400 864 106

Injection pump

Pump designation : PES4A95D410/3RS2789

EP type number : 0 410 894 995

Governor

Governer design. : RSV325...1250A5C879L

Governer no. : 0 420 232 634

Cust. part No. : 0423 2071 KY

Customer-spec. information Customer : KHD-DMI Motor : BF4L 913 : 78.0

Power KW

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

: 173.5 bar Tolerance bar

: 1 680 750 014 Test lines

Outside diameter : 6.0

x inside diameter: 2.0 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm 3.00 : +- 0.05 Tolerance mm

Check

tolerance mm : **←** 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

### BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 13.50 Tolerance mm :  $\leftarrow$  0.05

Del. quantity

cm3/1000 strokes : 87.0

Tolerance

cm3/1000 strokes : → 1.0

Check tolerance

cm3/1000s. · +~ 3.0

Spreed

Tolerance

cm3/1000 strokes : 3.5

_	<del>1</del>
Check tolerance cm3/1000s. : 8.0	CONTROL LEVER
• · · · · · · · · · · · · · · · · · · ·	control lever
	position degree : 102.0
Rated speed rpm : 325	tolerance degree : +- 4.0
Rack travel in mm: 9.60	RATED SPEED
Tolerance mm : ← 0.10	rack travel mm : 12.50
Del. quantity	Rated speed rpm : 1295
cm3/1000 strokes : 14.0	Tolerance 1/min : ← 5
Tolerance : +- 2.0	t + rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1355
cm3/1000s. : +- 4.5	Tolerance 1/min : + 15
Spreed	+
Tolerance - cm3/1000 strokes : 5.5 -	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
cm3/1000 strokes : 5.5 - Check tolerance -	+ Tolerance mm : + 0.55 + Rated speed rpm : 1565
cm3/1000s. : 9.0	Thatea speed i pin . 1303
•	rack travel mm : 4.00
(n) (m) (n) (n) (n) (n) (n) (n) (n) (n) (n) (n	Rated speed rpm : 1415
(B) SETTING OF INJECTION PUMP - WITH GOVERNOR -	Tolerance 1/min : + 15
WITH GOVERNOR	
•	+
CULTURE OF EACH DOOLSTON	101.70.5
GUIDE SLEEVE POSITION -	LOW IDLE
	1
control lever	control lever
position degree : FREE -	position degree : 69.0
Rated speed rpm : 800 -	+ tolerance degree : +- 4.0 -
Rack travel in mm : 0.50 - Tolerance mm : + 0.20 -	Setting point w/out bumper spring
	Rated speed rpm : 325
governor spring -	rack travel mm : 9.10
pre-tension - click setting x : 3.00 -	├ Tolerance mm : +- 0.10 L
5.00	Rated speed rpm : 100
	+
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.50
Rated speed rpm : 1250	Testing:
Aneroid pressure	1
hPa : -	Rated speed rpm : 325
Del. quantity - cm3/1000 strokes : 87.0 -	rack travel mm : 9.60 Tolerance mm : + 0.10
cm3/1000 strokes : 87.0 - Tolerance -	Toterarice min : += 0.10
$cm3/1000$ strokes : $\leftarrow$ 1.0	rack travel mm : 2.00
Check tolerance	Rated speed rpm : 605
cm3/1000s. : +- 3.0	Tolerance 1/min : +- 30
Spreed	
cm3/1000 strokes : 3.5	TORQUE CONTROL
Check tolerance	Rated speed rpm : 1250
cm3/1000s. : 8.0	rack travel mm : 13.50
-	Folerance mm : +- 0.05

Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.20 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 13.90 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1400 : 14.20 : + 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 13.30 : ← 0.10
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 300 : 13.70 : ← 0.10
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 750 : 750 : 13.90 : ← 0.10 : 85.0 : ← 2.0 : ← 4.0 : 3.5 : 8.0

H06

Del. quantity cm3/1000 strokes	:	68.0
Tolerance cm3/1000 strokes	: +-	2.0
Check tolerance cm3/1000s.	: +-	4.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.25
Tolerance mm	:	+-	0.75
Del. quantity			
cm3/1000 strokes	:		120.0
Tolerance			
cm3/1000 strokes	:	+-	7.5
Check tolerance			
cm3/1090s.	•	+-	10.0

# LOW IDLE

Rated speed rpm	:	325
Rack travel in mm Tolerance mm Del. quantity	: +-	9.60 0.10
cm3/1000 strokes Tolerance	:	14.0
cm3/1000 strokes Check tolerance	: +-	2.0
cm3/1000S. Spreed Tolerance	: +-	4.5
cm3/1000 strokes	:	5.5
cm3/1000s.	:	9.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.12.97 Test oil : ISO 4113

Combination No. : 0 400 866 208BE

Injection pump
Pump designation :
EP type number :

Governor

Governer design. : Governer no. :

Cust. part No. : 392 1164

Customer—spec. information
Customer : CUMMINS
Motor : 6 CT 8.3
Power KW : 152.0

#### TEST BENCH REQUIREMENTS

Inlet line : 2.

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 28.0 Tolerance bar : +- 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

\*NW after s.o.d. : 10.00 Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.45 Tolerance mm : + 0.05

Del. quantity	Aneroid pressure
cm3/1000 strokes : 125.5	hPa : - Del. quantity
Tolerance + cm3/1000 strokes : + 1.0 +	cm3/1000 strokes : 125.5 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance
cm3/1000s. : + 3.5	cm3/1000s. : +- 3.5 Spreed
Spreed +	Tolerance cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	CONTROL LEVER
<u> </u>	control lever
Rated speed rpm : 415	position degree : 96.0 tolerance degree : + 4.0
Rack travel in mm: 5.60	-
Tolerance mm : + 0.10 + Del. quantity +	RATED SPEED rack travel mm : 11.40
cm3/1000 strokes : 18.0 +	Rated speed rpm : 1115
Tolerance + cm3/1000 strokes : + 2.0 +	Tolerance 1/min : +- 5
Check tolerance	rack travel mm : 4.00
cm3/1000s. : + 4.5 + 5preed	Rated speed rpm : 1180 Tolerance 1/min : +- 15
Tolerance +	
cm3/1000 strokes : 6.0 + Check tolerance +	rack travel mm : 0.85 Tolerance mm : +- 0.55
cm3/1000s. : 8.0	Rated speed rpm : 1350
+	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP + WITH GOVERNOR +	Rated speed rpm : 1190 Tolerance 1/min : +- 15
‡	
GUIDE SLEEVE POSITION	LOW IDLE
Ŧ	LOW IDEE
control lever position degree : - 3	control lever
Rated speed rpm : 800	position degree : 76.0
Rack travel in mm: 0.50	tolerance degree : +- 4.0
Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring	Rated speed rpm : 415
pre-tension + click setting x : 4.25 +	rack travel mm : 5.10 Tolerance mm : +- 0.10
	Rated speed rpm : 100
FULL LOAD DELIVERY AT FULL LOAD STOP	CRT mm min. : > 19.00
Rated speed rpm : 1050	
+	Testing:

Rated speed rpm : 415 rack travel mm : 5.60 Tolerance mm : + 0.10

rack travel mm : 2.0 Rated speed rpm : 470 2.00 Tolerance 1/min : +- 30

TORQUE CONTROL

Rated speed rpm : 1050 rack travel mm : 12.45 Tolerance mm : ± 0.05

### STARTING FUEL DELIVERY

Rated speed rpm : 100 rack travel mm : 20.00 Tolerance mm : + 1.00 Del. quantity

cm3/1000 strokes : 147.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

: **←** 13.0 cm3/1000s.

### LOW IDLE

Rated speed rpm : 415

Rack travel in mm : 5.60 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 18.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : <del>←</del> 4.5

Spreed Tolerance

6.0 cm3/1000 strokes :

Check tolerance

cm3/1000s. : 8.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.04.98 Test oil : ISO 4113

Combination No. : 0 400 876 434

Injection pump

Pump designation : PES6A95D410RS2864 EP type number : 0 410 896 888

Governor

Governer design. : RSV400...1050A8C2263

: -11L

Governer no. : 0 420 232 635

Cust. part No. : 87 801 607

Customer-spec. information Customer : NH

Motor

: P 396

Power KW

: 176.0

### TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet

temp. °C : +- 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

H10

x inside diameter : 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing

: 0-60-120-180-240

: -300 : + 0.50

Tolerance Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.50 Check

tolerance °NW

: <del>+-</del> 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.75

Tolerance mm :  $\leftarrow$  0.10

Del. quantity cm3/1000 strokes : 137.0	Aneroid pressure hPa : 1200 Del. quantity
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 137.0 Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
cm3/1000s. : +- 3.0 +-	cm3/1000s. : +- 3.0 Spreed Tolerance
Tolerance	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : 3.5	cm3/1000s. : 8.0
Check tolerance cm3/1000S. : 8.0	CONTROL LEVER
‡	control lever
Rated speed rpm : 450	position degree : 97.0 tolerance degree : + 4.0
Rack travel in mm: 5.75 Tolerance mm: + 0.10	
Del. quantity + cm3/1000 strokes : 12.0	ASSEMBLY GOVERNOR SETTING
Tolerance cm3/1000 strokes : + 2.0	Rated speed rpm : 1095 rack travel mm : 10.60
Check tolerance	
cm3/1000s. : +- 4.5 Spreed	Rated speed rpm : 1165 Tolerance 1/min : +- 5
Tolerance + cm3/1000 strokes : 5.5 +	rack travel mm : 4.00
Check tolerance cm3/1000S. : 9.0 +	rack travel mm : 0.85 Tolerance mm : + 0.55
‡	Rated speed rpm : 1300
(B) SETTING OF INJECTION PUMP +	Rated speed rpm : 1096
1	rack travel mm : 10.60
GUIDE SLEEVE POSITION	Rated speed rpm : 1166 Tolerance 1/min : +- 5
	rack travel mm : 4.00
control lever position degree : -3	rack travel mm : 0.85 Tolerance mm : ← 0.55
Rated speed rpm : 800	Rated speed rpm : 1300
Rack travel in mm: 0.50	Datasi annual nam . 1007
Tolerance mm : + 0.20	Rated speed rpm : 1097 rack travel mm : 10.60
governor spring pre-tension	Rated speed rpm : 1167
click setting x : 4.50	Tolerance 1/min : +- 5 rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85
Rated speed rpm : 700	Tolerance mm : +- 0.55 Rated speed rpm : 1300

Rated speed rpm rack travel mm	: 1098 : 10.60	+ Rated speed rpm : 500 + rack travel mm : 13.80 + Tolerance mm : + 0.10
Rated speed rpm Tolerance 1/min rack travel mm	: +- 5	+ Rated speed rpm : 1050 + rack travel mm : 11.20 + Tolerance mm : + 0.05
rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.55	Rated speed rpm : 1050 rack travel mm : 12.00 Tolerance mm : +- 0.10
Rated speed rpm rack travel mm		ANEROID/ALTITUDE COMPENSATOR TEST
Rated speed rpm Tolerance 1/min rack travel mm	: +- 5	SETTING
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55	+ Rated speed rpm : 500 + Pressure hPa : 1200 + rack travel mm : 13.80 + Tolerance mm : + 0.10
Rated speed rpm rack travel mm	: 1100 : 10.60	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 10.80 Tolerance mm : + 0.05
Rated speed rpm Tolerance 1/min rack travel mm	: +- 5	MEASUREMENT
rack travel mm Tolerance mm Rated speed rpm	: <del>←</del> 0.55	Rated speed rpm : 500  Pressure hPa : 700  rack travel mm : 12.85  Tolerance mm : + 0.05
LOW IDLE		Pressure hPa : 600 rack travel mm : 11.90 Tolerance mm : +- 0.20
control lever position degree tolerance degree		FUEL DELIVERY CHARACTERISTICS
Testing: Rated speed rpm	: 450	Aneroid pressure
rack travel mm Tolerance mm	: 5.75 : ← 0.10	hPa : - Rated speed rpm : 500 Del. quantity
rack travel mm Rated speed rpm Tolerance 1/min	: 585	cm3/1000 strokes : 98.5 Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.75 : + 0.10	cm3/1000s. : + 3.0  STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.25
Tolerance mm	:	+-	0.75
Del. quantity			
cm3/1000 strokes	:		164.0
Tolerance			
cm3/1000 strokes	:	+-	8.0
Check tolerance			
cm3/1000S.	:	+-	11.0

# LOW IDLE

Rated speed rpm	:	450	
	: : +-	5.75 0.10	
Del. quantity cm3/1000 strokes Tolerance	:	12.0	
cm3/1000 strokes Check tolerance	: +-	2.0	
cm3/1000s.	: +-	4.5	
Tolerance cm3/1000 strokes	:	5.5	
Check tolerance cm3/1000s.	:	9.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 03.04.98 : ISO 4113

Combination No. : F 002 A0Z 011

Injection pump

Pump designation : PES6A95D320/3RS2881

EP type number : 9 410 037 215

Governor

Governer design. : RSV475...1100AUC888R

Governer no. : F 002 A20 212

Cust. part No. : 3930164

Customer-spec. information Customer : CUMMINS Motor : 6BTA Power KW : 124.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm: 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

"NW after s.o.d. : 7.50 Tolerance : + 0.10

Check

: **←** 0.29 tolerance °NW

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 13.65

Tolerance mm : +- 0.05	+ Rated speed rpm : 1050 + Aneroid pressure
Del. quantity cm3/1000 strokes : 116.0	hPa : 1200 + Del. quantity
Talana	+ cm3/1000 strokes : 116.0
Tolerance cm3/1000 strokes : +- 1.0	Tolerance cm3/1000 strokes : + 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000s. : + 3.0 + Spreed
Spreed	
Tolerance	+ Check tolerance + cm3/1000s. : 6.5
cm3/1000 strokes : 4.0	‡
Check tolerance cm3/1000S. : 6.5	CONTROL LEVER
	position degree : 94.0
Rated speed rpm : 475	tolerance degree : +- 4.0
Rack travel in mm : 5.95	RATED SPEED
Tolerance mm : + 0.10	rack travel mm : 12.70
Del. quantity	Rated speed rpm : 1115
cm3/1000 strokes : 20.6	Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : +- 2.0	rack travel mm : 4.00
Check tolerance	+ Rated speed rpm : 1185
cm3/1000s. : +- 4.5	Tolerance 1/min : +- 15
Spreed	†
Tolerance cm3/1000 strokes : 6.0	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
Check tolerance	Rated speed rpm : 1300
cm3/1000S. : 8.0	+
	rack travel mm : 4.00
(D) OFFICE OF THEFTTON DING	Rated speed rpm : 1190
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	+ Tolerance 1/min : +- 15
	_
GUIDE SLEEVE POSITION	LOW IDLE
	+
control lever	control lever
position degree : FREE Rated speed rpm : 800	<pre>position degree : 75.0 tolerance degree : +- 4.0</pre>
nateu specu (piii . 000	Total and degree . 1- 4.0
Rack travel in mm : 0.50	Control lever difference
Tolerance mm : + 0.20	+ Grad : 19.0
governor spring	tolerance degree : +- 6.0
pre-tension	For Setting point w/out bumper spring
click setting $x$ : 2.50	+
-	Rated speed rpm : 475
FILL LOAD DELTHENY AT THE LOAD OTCO	- + rack travel mm : 4.95
FULL LOAD DELIVERY AT FULL LOAD STOP	+ Tolerance mm : +- 0.10
	Γ

Rated speed rpm : 100 Tolerance cm3/1000 strokes :  $\leftarrow$  2.0 CRT mm min. : > 19.00 Check tolerance cm3/1000s. 4.0 Testina: : 475 Rated speed rpm Aneroid pressure 5.95 rack travel mm hPa : +- 0.10 Rated speed rpm : 500 Tolerance mm Del. quantity cm3/1000 strokes : 83.9 2.00 rack travel mm : Rated speed rpm : 550 Tolerance Tolerance 1/min : ← 30 cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. 3.0 : +-TORQUE CONTROL : 1050 Rated speed rpm 13.65 rack travel mm STARTING FUEL DELIVERY Tolerance mm : +- 0.05 Rated speed rpm : 750 100 Rated speed rpm : rack travel mm : 20.50 : +- 0.50 Tolerance mm ANEROID/ALTITUDE Del. quantity COMPENSATOR TEST cm3/1000 strokes : 121.5 Tolerance cm3/1000 strokes : + 10.0SETTING Check tolerance : +- 15.0 cm3/1000s. Rated speed rpm : 500 Pressure hPa 1200 500 Rated speed rpm LOW IDLE Pressure hPa : rack travel mm 10.70 Rated speed rpm : 475 Tolerance mm : **←** 0.20 Rack travel in mm : 5.95 **MEASUREMENT** Tolerance mm : +- 0.10 Rated speed rpm 500 Del. quantity cm3/1000 strokes : 20.6 550 Pressure hPa Tolerance 12.50 cm3/1000 strokes : +- 2.0 rack travel mm : + 0.20 Check tolerance Tolerance mm : <del>+-</del> 4.5 cm3/1000s. 400 Pressure hPa Spreed 11.85 rack travel mm : Tolerance Tolerance mm : +- 0.20 cm3/1000 strokes : 6.0 Check tolerance 8.0 cm3/1000s. FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1200 End of test specification sheet hPa Rated speed rpm : 750 Del. quantity

cm3/1000 strokes : 120.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 03.04.98 Test oil : ISO 4113

Combination No. : F 002 A0Z 050

Injection pump

Pump designation : PES6A95D320/3RS2916

EP type number : F 002 A10 010

Governor

Governer design. : RSV425...1050A0C930R

Governer no. : F 002 A20 236

Cust. part No. : 328 3917

Customer—spec. information Customer : CUMMINS Motor : 6BT Power KW : 100.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C :  $\leftarrow$  2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter: 2.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

°NW after s.o.d. : 7.00Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25 Tolerance mm : + 0.05

+	Aneroid pressure
Del. quantity cm3/1000 strokes : 98.2	hPa : 900 Del. quantity
	cm3/1000 strokes : 98.2 Tolerance
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000s. : +- 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
+	Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 6.0
Check tolerance cm3/1000S. : 6.0	CONTROL LEVER
<del></del> ‡	control lever
+	position degree : 95.0
Rated speed rpm : 425	tolerance degree : +- 4.0
Rack travel in mm: 5.05	RATED SPEED
Tolerance mm : +- 0.10	rack travel mm : 10.25
Del. quantity	Rated speed rpm : 1090
cm3/1000 strokes : 18.5	Tolerance 1/min : +- 5
Tolerance	made through the control of the cont
cm3/1000 strokes : +- 2.0 + Check tolerance +-	rack travel mm : 4.50 Rated speed rpm : 1145
cm3/1000S. : +- 4.5	Tolerance 1/min : +- 5
Spreed	Total and thin
Tolerance	rack travel mm : 0.85
cm3/1000 strokes : 6.0 +	Tolerance mm : +- 0.55
Check tolerance	Rated speed rpm : 1275
cm3/1000S. : 8.0 +	4.50
†	rack travel mm : 4.50
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1145 Tolerance 1/min : +- 15
WITH GOVERNOR	roterance Minn : +- 15
WITH GOVERNOR	
GUIDE SLEEVE POSITION	LOW IDLE
- control loven	control lever
control lever + position degree : FREE +	position degree : 74.0
Rated speed rpm : 800	tolerance degree : +- 4.0
+	_
Rack travel in mm : 0.50 +	Control lever difference
Tolerance mm : + 0.20 +	Grad : 21.0
+	tolerance degree : +- 6.0
governor spring + pre-tension +	Setting point w/out bumper spring
click setting x : 2.75	secting point wroat bumper spring
1	Rated speed rpm : 425
	rack travel mm : 4.05
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance mm : + 0.10
Rated speed rpm : 1050	Rated speed rpm : 100

CRT mm min. : > 19.00 Testing: 425 Rated speed rpm rack travel mm 5.05 : + - 0.10Tolerance mm 2.00 rack travel mm Rated speed rpm : 600 Tolerance 1/min : +-TORQUE CONTROL 1050 Rated speed rpm : : 11.25 rack travel mm Tolerance mm : + - 0.05800 Rated speed rpm : rack travel mm 11.80 Tolerance mm : <del>←</del> 0.20 ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm 500 Pressure hPa 900 500 Rated speed rpm Pressure hPa 9.90 rack travel mm : + - 0.20Tolerarice mm MEASUREMENT Rated speed rpm 500 Pressure hPa 650 rack travel mm 11.25 Tolerance mm : +- 0.20 400 Pressure hPa 10.60 rack travel mm : + 0.20Tolerance mm FUEL DELIVERY CHARACTERISTICS

Tolerance cm3/1000 strokes : +-2.0 Check tolerance cm3/1000s. : + 4.0 Aneroid pressure Rated speed rpm 500 Del. quantity cm3/1000 strokes : 79.5 Tolerance cm3/1000 strokes :  $\leftarrow$  1.0 Check tolerance cm3/1000S. : +- 3.0 STARTING FUEL DELIVERY Rated speed rpm 100 rack travel mm : 20.50 : **←** 0.50 Tolerance mm Del. quantity cm3/1000 strokes : 121.5 Tolerance cm3/1000 strokes :  $\leftarrow$  10.0 Check tolerance cm3/1000s. : +- 15.0 LOW IDLE Rated speed rpm : 425 Rack travel in mm : 5.05 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 18.5 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance 4.5 cm3/1000s. Spreed Tolerance cm3/1000 strokes : 6.0

End of test specification sheet

8.0

Check tolerance

cm3/1000s.

cm3/1000 strokes : 106.2

Aneroid pressure

Rated speed rpm

Del. quantity

900

800

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 27.03.98 : ISO 4113

Combination No. : 0 402 746 621

Injection pump

Pump designation : PES6P120A720RS7424 EP type number : 0 412 726 964

Governor

Governer design. : RQV325...875PA944

: -24K

Governer no. : 0 421 815 535

Cust. part No. : 313GC5228-P14

Customer-spec. information Customer : MACK : EM7-300 Motor

Power KW

: 224.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0

x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm : ← 1.00

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

Tolerance : +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.10 Tolerance mm : + 0.05

	I multiple all accom
Bal	guide sleeve
Del. quantity	+ travel mm : 3.81
cm3/1000 strokes : 312.0	+ Tolerance mm : + 0.25
	†
Tolerance	+ Rated speed rpm : 1370
cm3/1000 strokes : $+-$ 1.0	+ guide sleeve
	+ travel mm : 13.50
Check tolerance	† Tolerance mm : +- 0.50
cm3/1000s. : +- 4.0	†
Spreed	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	†
Tolerance	+ Rated speed rpm : 875
cm3/1000 strokes : 8.0	+ Aneroid pressure
	+ hPa : 1200
Check tolerance	+ Del. quantity
cm3/1000s. : 12.0	+ cm3/1000 strokes : 312.0
	Tolerance
	+ cm3/1000 strokes : + 1.0
	+ Check tolerance
Rated speed rpm : 600	+  cm3/1000s. : + 4.0
<b>D</b>	Spreed
Rack travel in mm : 4.80	+ Tolerance
Tolerance mm : + 0.10	+ cm3/1000 strokes : 8.0
Del. quantity	+ Check tolerance
cm3/1000 strokes : 32.0	+ cm3/1000s. : 12.0
Tolerance	†
cm3/1000 strokes : +- 3.0	†
Check tolerance	CONTROL LEVED
cm3/1000s. : +- 5.0	+ CONTROL LEVER
Spreed	T combact towns
Tolerance cm3/1000 strokes : 5.0	+ control lever
******	position degree : 103.0
Check tolerance cm3/1000S. : 9.0	tolerance degree : +- 4.0
cm3/1000s. : 9.0	T DATED SPEED
	+ RATED SPEED + rack travel mm : 13.00
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	+ Rated speed rpm : 930 + Tolerance 1/min : + 5
MILL GOVEKIAOK	Check
	speed 1/min : + 10
GUIDE SLEEVE TRAVEL	T Speed 1/111111 . To 10
GOINE STEFAE LUMAET	Track travel mm : 4.00
Rated speed rpm : 939	Rated speed rpm : 1115
guide sleeve	+ Tolerance 1/min : + 15
travel mm : 7.51	+ Check
Tolerance mm : + 0.15	+ speed 1/min : + 20
TO COT CATION THAT	55554 17.1111
Rated speed rpm : 340	+ rack travel mm : 0.50
guide sleeve	+ Tolerance mm : + 0.50
travel mm : 1.92	+ Rated speed rpm : 1210
Tolerance mm : + 0.20	-
. = 0.01 miles	<del> </del>
Rated speed rpm : 726	<del> </del>
guide sleeve	
travel mm : 5.63	LOW IDLE
Tolerance mm : + 0.25	+
	<del> </del>
Rated speed rpm : 510	∔ control lever
The second secon	position degree : 65.0
	1 1

tolerance degree : +- 4.0	†
Setting point w/out bumper spring	Start interlock
Rated speed rpm : 275	Rated speed rpm : > 100 Rated speed rpm : < 250
CRT mm min. : > 6.06	+ Check
Testing:	speed 1/min : > 80
Rated speed rpm : 340 rack travel mm : 4.80 Tolerance mm : + 0.10  Rated speed rpm : 425	speed 1/min : < 255  FUEL DELIVERY CHARACTERISTICS
Rated Speed rpm : 423	Ţ
TORQUE CONTROL Rated speed rpm : 875 rack travel mm : 14.10	Aneroid pressure hPa : 1200 Rated speed rpm : 510 Del. quantity
Tolerance mm : +- 0.05	+ cm3/1000 strokes : 402.0 + Tolerance
Rated speed rpm : 510 rack travel mm : 14.85 Tolerance mm : + 0.10	+ cm3/1000 strokes : + 3.0 + Check tolerance + cm3/1000s. : + 6.0
Rated speed rpm : 625 rack travel mm : 14.70 Tolerance mm : + 0.20	+ Spreed + Tolerance + cm3/1000 strokes : 8.0 + Check tolerance
Rated speed rpm : 400 rack travel mm : 14.25 Tolerance mm : + 0.20	rack travel mm : 14.70 Tolerance mm : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	Aneroid pressure
SETTING	+ hPa : - Rated speed rpm : 400 Del. quantity cm3/1000 strokes : 187.5
Rated speed rpm : 510 Pressure hPa : 1200	Tolerance + cm3/1000 strokes : +- 2.0 + Check tolerance
Rated speed rpm : 510 Pressure hPa : - rack travel mm : 9.20 Tolerance mm : + 0.20	cm3/1000s. : +- 4.0
MEASUREMENT	STARTING FUEL DELIVERY
Rated speed rpm : 510	Rated speed rpm : 100 rack travel mm : 21.00 Tolerance mm : + 0.50
Pressure hPa : 740 rack travel mm : 13.20 Tolerance mm : +- 0.20	Del. quantity cm3/1000 strokes : 190.0 Tolerance
Pressure hPa : 400 rack travel mm : 10.60 Tolerance mm : +- 0.05	cm3/1000 strokes : +- 20.0 Check tolerance cm3/1000s. : +- 30.0

# LOW IDLE

Rated speed rpm	:		600	
Rack travel in mm Tolerance mm	•		4.80 0.10	
Del. quantity	•		0.10	
cm3/1000 strokes	:		32.0	
Tolerance				
cm3/1000 strokes	:	+-	3.0	
Check tolerance				
cm3/1000S.	:	+-	5.0	
Spreed				
01   000 011 01100	:		5.0	
Check tolerance cm3/1000S.	:		9.0	

# Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 27.03.98

Combination No. : 0 402 746 622

Injection pump

Pump designation : PES6P120A720RS7424 EP type number : 0 412 726 964

Governor

Governer design. : RQV325...900PA944

: -25K

Governer no. : 0 421 815 536

Cust. part No. : 313GC5228-P16

Customer-spec. information Customer : MACK : E7-350 Motor Power KW : 261.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C 2.0

Overflow valve : 2 413 359 008

Inlet press. bar : 2.8 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

: 2.80 : ← 0.05 Prestroke mm Tolerance mm Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00 Tolerance mm : + 1.00

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : + 0.75

Start of delivery blocking

Tolerance : ← 0.50

Check

tolerance °NW : ← 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.15 Tolerance mm : +- 0.05

No. I women to the contract of	
Del. quantity cm3/1000 strokes : 319.5	CONTROL LEVER
Tolerance cm3/1000 strokes : + 1.0	control lever position degree : 117.0 tolerance degree : + 6.0
Check tolerance cm3/1000s. : +- 4.0	+ RATED SPEED + rack travel mm : 13.10
Spreed	Rated speed rpm : 945 Tolerance 1/min : + 5
Tolerance : 8.0 -	+ rack travel mm : 4.00 + Rated speed rpm : 1115
Check tolerance cm3/1000s. : 12.0	Tolerance 1/min : +- 15
	+ rack travel mm : 0.50 + Tolerance mm : +- 0.50 + Rated speed rpm : 1200
Rated speed rpm : 600	+
Rack travel in mm: 4.80	+
Tolerance mm : +- 0.10 -	+
Del. quantity -	+ LOW IDLE
cm3/1000 strokes : 32.0	+
Tolerance	t
cm $3/1000$ strokes : $\leftarrow$ 3.0	+ control lever
Check tolerance	position degree : 64.0
cm $3/1000$ s. : $\leftarrow$ 5.0	tolerance degree : +- 6.0
Spreed -	<del>†</del>
Tolerance	+ Setting point w/out bumper spring
cm3/1000 strokes : 5.0 -	<del>+</del>
Check tolerance -	+ Rated speed rpm : 275
cm3/1000S. : 9.0	†
•	+ CRT mm min. : > 6.10
(B) SETTING OF INJECTION PUMP -	† † Testing:
WITH GOVERNOR	
WITH GOVERNOR	Rated speed rpm : 340
<b>-</b>	rack travel mm : 4.80
	Tolerance mm : + 0.10
FULL LOAD DELIVERY AT FULL LOAD STOP -	1
-	Rated speed rpm : 425
Rated speed rpm : 900	<u>'</u>
Aneroid pressure	
hPa : 1200	TORQUE CONTROL
Del. quantity	Rated speed rpm : 900
cm3/1000 strokes : 319.5	rack travel mm : 14.15
Tolerance -	Tolerance mm : +- 0.05
cm3/1000 strokes : +- 1.0	+
Check tolerance	Rated speed rpm : 625
cm3/1000S. : +- 4.0	rack travel mm : 13.60
Spreed	Tolerance mm : + 0.10
Tolerance	<del></del>
cm3/1000 strokes : 8.0 -	Rated speed rpm : 500
Check tolerance	rack travel mm : 12.80
cm3/1000S. : 12.0 -	Tolerance mm : +- 0.40
	+

ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 900 : 1200
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 900 : - : 8.50 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 900
Pressure hPa rack travel mm Tolerance mm	: 810 : 13.20 : + 0.20
Pressure hPa rack travel mm Tolerance mm	: 420 : 10.15 : ← 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 250
Check speed 1/min	: > 80
Check speed 1/min	: < 255
FUEL DELIVERY CHA	RACTERISTICS
hPa Rated speed rpm	: 1200 : 625
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	: 625
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 625 : 339.5
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 625 : 339.5 : + 3.0
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S. Spreed Tolerance	: 625 : 339.5 : ← 3.0 : ← 6.0

Tolerance mm	: + 0.40
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes	
Check tolerance cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
LOW IDLE	
LOW IDLE	: 600
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity	: 4.80 : +- 0.10
Rated speed rpm  Rack travel in mm  Tolerance mm  Del. quantity  cm3/1000 strokes  Tolerance  cm3/1000 strokes	: 4.80 : +- 0.10
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed	: 4.80 : +- 0.10 : 32.0
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance	: 4.80 : + 0.10 : 32.0 : + 3.0 : + 5.0
Rated speed rpm  Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes	: 4.80 : + 0.10 : 32.0 : + 3.0 : + 5.0

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 18.03.98 : ISO 4113

Combination No. : 0 403 466 181

Injection pump

Pump designation : PES6MW100/120RS1238

EP type number : 0 413 406 237

Governor

Governer design. : RSV500...1000MWZA411

Governer no. : 0 420 085 302

Cust. part No. : 3930526

Customer-spec. information Customer : CDC

Motor

: 6 CT

Power KW

: 133.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar :

2.0

Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar

: +- 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0

x length mm :

600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

# Start of delivery blocking

\*NW after s.o.d. : 7.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW

: **←** 0.75

Barrel no.

: 1

Beginning of delivery differende

and maximum rack

15.00

travel : 15.00 Difference °CS : 2.00

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	<del></del> .	governor spring	
BASIC SETTING	-	pre-tension	
	-	click setting x	: 4.00
Rated speed rpm :	1000 -		
		ELUL LOAD DELTVE	RY AT FULL LOAD STOP
Rack travel in mm :	11 25	L TOLL LOAD DELIVER	AT AT TOLL LOAD STOP
	- 0.05	Rated speed rpm	: 1000
TOCCT CATOC TIME	5.05	Aneroid pressure	
Del. quantity	-	hPa	: 1200
cm3/1000 strokes :	130.5	Del. quantity	
		cm3/1000 strokes	: 130.5
Tolerance	-	Tolerance	
cm3/1000 strokes : +	- 1.0 -	cm3/1000 strokes	: <del>+</del> 1.0
	_	Check tolerance	
Check tolerance		cm3/1000s.	: +- 4.0
cm3/1000s. : +	- 4.0 -	Spreed	
Sanaad		Tolerance cm3/1000 strokes	: 4.0
Spreed	-	- CM3/1000 STROKES - Check tolerance	4.0
Tolerance	- -	cm3/1000s.	: 7.5
cm3/1000 strokes :	4.0	L CIID/ 10003.	. (.)
cinor rood scrokes :	4.0		
Check tolerance	-		
cm3/1000s. :	7.5	CONTROL LEVER	
		<del>-</del>	
	+	- control lever	
		<ul> <li>position degree</li> </ul>	
Rated speed rpm :	500	- tolerance degree	: +- 4.0
Rack travel in mm :	5.50	- RATED SPEED	
	- 0.10	rack travel mm	: 10.25
Del. quantity	- 0.10	- Rated speed rpm	
cm3/1000 strokes :	21.5	- Tolerance 1/min	: +- 5
Folerance		- Check	
cm3/1000 strokes : +	- 2.0	speed 1/min	: +- 15
Check tolerance	<del></del>		
cm3/1000s. : +-	- 4.5 -	- rack travel mm	: 4.00
Spreed	-	- Rated speed rpm	
rolerance		- Tolerance 1/min	: +- 5
cm3/1000 strokes :	3.5	- Check	
Check tolerance		- speed 1/min	: +- 10
m3/1000s. :	5.5		. 4.00
	1	- rack travel mm	; 1.UU , _ 0.70
B) SETTING OF INJECT	TON DIMD	- rack travel mm - Tolerance mm - Rated speed rpm	: TT U./U
	LON PUMP	- kated speed rpm	: 1250
VITH GOVERNOR	]	- - rack travel mm	: 4.00
	]	- Rated speed rpm	
		- Tolerance 1/min	: +- 15
SUIDE SLEEVE POSITION	]	- Check	
JOINE OCCUPE 1 OUT 1 TOIT	1	- speed 1/min	: +- 20
	4	•	- <del>-</del>
control lever	+	_	
position degree : -		-	
Rated speed rpm :	800 +		
	+	- LOW IDLE	
Rack travel in mm :		-	
Tolerance mm : +-	- u.zu †	-	

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control lever position degree : 83.0 tolerance degree : + 4.0 Control lever difference 17.0 Grad tolerance degree : +- 6.0 Setting point w/out bumper spring Rated speed rpm : 500 rack travel mm 5.00 Tolerance mm : + 0.10: 100 Rated speed rpm CRT mm min. : > 19.00Testing: 500 Rated speed rpm 5.50 rack travel mm : : + 0.10Tolerance mm TORQUE CONTROL 1000 Rated speed rpm rack travel mm : 11.25 : +- 0.05 Tolerance mm 700 Rated speed rpm rack travel mm : 12.85 : +- 0.10 Tolerance mm Rated speed rpm : 850 rack travel mm : 12.75 : +- 0.20 Tolerance mm ANEROID/ALTITUDE COMPENSATOR TEST SETTING Rated speed rpm : 500 1200 Pressure hPa Rated speed rpm 500 Pressure hPa 10.95 rack travel mm Tolerance mm : **←** 0.20 **MEASUREMENT** Rated speed rpm : 500 Pressure hPa 880 rack travel mm : 12.40

Tolerance mm : +- 0.20 Pressure hPa 600 rack travel mm 11.40 Tolerance mm : + 0.20 FUEL DELIVERY CHARACTERISTICS Aneroid pressure 1200 Rated speed rpm : 850 rack travel mm 12.75 : +- 0.20 Tolerance mm Del. guantity cm3/1000 strokes : 155.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance cm3/1000s. : +-5.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance 9.0 cm3/1000s. Aneroid pressure 500 Rated speed rpm : Del. quantity cm3/1000 strokes : 122.0 Tolerance cm3/1000 strokes : +- 1.0Check tolerance cm3/1000s. : +- 3.0 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 20.50 : **←** 1.00 Tolerance mm Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : +- 10.0Check tolerance : +- 13.0 cm3/1000S. LOW IDLE Rated speed rpm : 500

Rack travel in mm Tolerwice mm	:	+	5.50 0.10
Del. quantity cm3/1000 strokes Tolerance	:		21.5
cm3/1000 strokes Check tolerance	:	+-	2.0
cm3/1000s. Spreed	:	+	4.5
Tolerance cm3/1000 strokes Check tolerance	:		3.5
cm3/1000s.	:		5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 09.04.98 Test oil : ISO 4113

Combination No. : 0 402 076 790

Injection pump

Pump designation : PES6P120A720RS3352 EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

: -5

: 0 421 833 525 Governer no.

Cust. part No. : RE66242

Customer-spec. information Customer : DEERE : 6081TF001 Motor Power KW : 149.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

40 temp. °C Tolerance °C 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : ← 1.5

Test Lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : + 1.0

Prestroke mm 3.60 Tolerance mm : +- 0.05

Check

: +- 0.10tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Start of delivery blocking

°NW after s.o.d. : 6.50 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

14.00 travel Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100

	1
Rack travel in mm : 11.55 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 134.5	Rated speed rpm : 1100 Aneroid pressure hPa : 900
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 134.5 Tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 3.0
Spreed	Spreed Tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	+
	CONTROL LEVER
Rated speed rpm : 400  Rack travel in mm : 5.70	control lever position degree : 97.0 tolerance degree : +- 4.0
Tolerance mm : + 0.10	+
Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : + 2.0	+ RATED SPEED + rack travel mm : 10.50 + Rated speed rpm : 1160 + Tolerance 1/min : + 5
Check tolerance cm3/1000s. : +- 4.5 Spreed	rack travel mm : 4.00 Rated speed rpm : 1215
Tolerance cm3/1000 strokes : 6.0	Tolerance 1/min : +- 5
Check tolerance cm3/1000s. : 8.0	+ rack travel mm : 0.85 + Tolerance mm : +- 0.55 + Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : + 15
GUIDE SLEEVE POSITION	<u> </u>
control lever	LOW IDLE
position degree : - 3 Rated speed rpm : 800 Rack travel in mm : 0.50	control lever position degree : 74.0 tolerance degree : + 4.0
Tolerance mm : + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.50	Rated speed rpm : 400 rack travel mm : 5.20 Tolerance mm : +- 0.10

Rated speed rpm CRT mm min. Testing: Rated speed rpm rack travel mm Tolerance mm	: > 19.00 : 400 : 5.70	Aneroid pressure hPa : 900 Rated speed rpm : 700 Del. quantity cm3/1000 strokes : 150.5 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm  Rated speed rpm rack travel mm Tolerance mm	: 11.55 : +- 0.05 : 700	Aneroid pressure hPa : - Rated speed rpm : 500 Del. quantity cm3/1000 strokes : 78.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. : + 4.0
ANEROID/ALTITUDE COMPENSATOR TEST		STARTING FUEL DELIVERY
SETTING		Rated speed rpm : 100 rack travel mm : 21.00
Rated speed rpm Pressure hPa	: 500 : 900	+ Tolerance mm : + 0.50 + Del. quantity + cm3/1000 strokes : 105.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm MEASUREMENT	: - : 9.20 : +- 0.20	Tolerance cm3/1000 strokes : + 20.0 Check tolerance cm3/1000s. : + 25.0
Rated speed rpm		LOW IDLE
Pressure hPa rack travel mm Tolerance mm	: 550 : 11.00 : +- 0.20	Rated speed rpm : 400
Pressure hPa rack travel mm Tolerance mm	: 210 : 9.80 : + 0.05	Rack travel in mm: 5.70 Tolerance mm: + 0.10 Del. quantity cm3/1000 strokes: 26.0 Tolerance
Start interlock		- cm3/1000 strokes : +- 2.0 - Check tolerance
Rated speed rpm	: > 100	+ cm3/1000s. : +- 4.5 + Spreed + Tolerance
Check speed 1/min	: > 80	- cm3/1000 strokes : 6.0 - Check tolerance - cm3/1000s. : 8.0
FUEL DELIVERY CHA	RACTERISTICS	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 09.04.98 : ISO 4113

Combination No. : 0 402 076 791

Injection pump

Pump designation : PES6P120A720RS3352 EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

: -6

Governer no.

: 0 421 833 526

Cust. part No. : RE66241

Customer-spec. information : DEERE Customer

Motor Power KW

: 6081TF001 : 149.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

: 208.5 bar Tolerance bar : +- 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter : 3.0

600 x length mm :

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50Tolerance mm :  $\leftarrow 1.50$ 

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 6.50 Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

: 1 Barrel no.

Beginning of delivery differende

and maximum rack

14.00 travel Difference ° CS : 2.50

BASIC SETTING

Rated speed rpm : 1100	
Rack travel in mm : 11.55 - Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP Rated speed rpm : 1100
Del. quantity cm3/1000 strokes : 134.5	- Aneroid pressure - hPa : 900 - Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	- cm3/1000 strokes : 134.5 - Tolerance - cm3/1000 strokes : +- 1.0 - Check tolerance
Check tolerance cm3/1000s. : + 3.0	- cm3/1000s. : +- 3.0 - Spreed - Tolerance
Spreed	- cm3/1000 strokes : 4.0 - Check tolerance
Tolerance cm3/1000 strokes : 4.0	- cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	- CONTROL LEVER
Rated speed rpm : 400	- control lever - position degree : 97.0 - tolerance degree : +- 6.0
Rack travel in mm : 5.70 Tolerance mm : +- 0.10 Del. quantity	RATED SPEED : 10.50 - Rated speed rpm : 1160
cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance	- Tolerance 1/min : + 5 - - rack travel mm : 4.00 - Rated speed rpm : 1215
cm3/1000s. : +- 4.5 Spreed Tolerance	- Tolerance 1/min : + 5 - rack travel mm : 0.85
cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 8.0	Tolerance mm : + 0.55 Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever position degree : 74.0 tolerance degree : +- 6.0
Rack travel in mm: 0.50 Tolerance mm: + 0.20	Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.50	Rated speed rpm : 400 rack travel mm : 5.20 Tolerance mm : +- 0.10

Test	ii	ng
lest	71	ng

Rated speed rpm : 400 rack travel mm : 5.70 : **←** 0.10 Tolerance mm

TORQUE CONTROL

Rated speed rpm : 1100 rack travel mm : 11.55 : + 0.05 Tolerance mm

Rated speed rpm : 700 rack travel mm : 11.90 700 : +- 0.10 Tolerance mm

# ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm : 500 Pressure hPa 900

500 Rated speed rpm Pressure hPa rack travel mm 9.20 Tolerance mm : +- 0.20

# **MEASUREMENT**

Rated speed rpm 500

Pressure hPa 550 rack travel mm 11.00 : +- 0.20 Tolerance mm

: 210 Pressure hPa 9.80 rack travel mm Tolerance mm : **←** 0.05

## Start interlock

Rated speed rpm : > 100

Check

speed 1/min : > 80

## FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

900 hPa Rated speed rpm :

Del. quantity

cm3/1000 strokes : 150.5

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

4.0 cm3/1000s.

Aneroid pressure

hPa Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 78.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. : +-4.0

# STARTING FUEL DELIVERY

100 Rated speed rpm : rack travel mm : 21.00 Tolerance mm : +- 0.50

Del. quantity

cm3/1000 strokes : 105.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

cm3/1000s. : +- 25.0

#### LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 5.70 Tolerance mm : +- 0.10 Del. quantity cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : +- 2.0 Check tolerance

cm3/1000s.

4.5

Spreed Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 8.0 :

## Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.04.98 : ISO 4113

Combination No. : F 002 A0Z 026CB

Injection pump

Pump designation : PES4A95D320/3RS2880

EP type number : 9 410 037 214

Governor

Governer design. : RSV475...1250A0C904R

Governer no. : F 002 A20 220

Cust. part No. : 3935030

Customer-spec. information

Customer : CDC Motor : 4BT3.9 Power KW : 54.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

2.0 Inlet press. bar :

Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 101 assembly

Opening pressure

208.5 bar Tolerance bar : ← 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0 x Length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 2.45
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-3-4-2

: 0-90-180-270 Phasing

Tolerance : +- 0.50

Check

: +- 0.75 tolerance °NW

Start of delivery blocking

\*NW after s.o.d. : 8.50

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm: 10.35

Tolerance mm : **←** 0.05

Del. quantity + cm3/1000 strokes : 85.0	Aneroid pressure hPa : - Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	cm3/1000 strokes : 85.0 Tolerance
Check tolerance	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000S. : + 3.0
Spreed	Spreed Tolerance
Tolerance	cm3/1000 strokes : 3.5 Check tolerance
cm3/1000 strokes : 3.5  Check tolerance	cm3/1000s. : 6.0
cm3/1000S. : 6.0	CONTROL LEVER
Rated speed rpm : 450	control lever position degree : 113.0
Rack travel in mm: 5.40	tolerance degree : +- 4.0
Tolerance mm : ← 0.10 +	RATED SPEED
Del. quantity	rack travel mm : 9.30
cm3/1000 strokes : 16.0	Rated speed rpm : 1365 Tolerance 1/min : +- 5
cm3/1000 strokes : + 2.0	Check
Check tolerance	speed 1/min : + 10
cm3/1000S. : +- 4.5 +-	rack travel mm : 4.00
Tolerance	Rated speed rpm : 1430
cm3/1000 strokes : 3.5	Tolerance 1/min : +- 5
Check tolerance + cm3/1000s. : 5.5	Check speed 1/min : + 10
cm3/1000s. : 5.5	speed 1/min : ← 10
+	rack travel mm : 0.85
(B) SETTING OF INJECTION PUMP	Tolerance mm : + 0.55
WITH GOVERNOR	Rated speed rpm : 1490
1	rack travel mm : 4.00
	Rated speed rpm : 1440
GUIDE SLEEVE POSITION	Tolerance 1/min : +- 15 Check
I	speed 1/min : +- 20
control lever position degree : -3 Rated speed rpm : 800	
Rack travel in mm : 0.50 Tolerance mm : + 0.20	LOW IDLE
governor spring	control lever
pre-tension +	position degree : 85.0
click setting $x$ : 4.50	tolerance degree : +- 4.0
	Control lever difference
FULL LOAD DELIVERY AT FULL LOAD STOP	Grad : 28.0
Partial amount arms (1250)	tolerance degree : +- 6.0
Rated speed rpm : 1250	Setting point w/out bumper spring

450 Rated speed rpm 4.90 rack travel mm Tolerance mm : **←** 0.10

100 Rated speed rpm

CRT mm min. : > 19.00

Testing:

Rated speed rpm 450 rack travel mm 5.40 Tolerance mm : +- 0.10

TORQUE CONTROL

1250 Rated speed rpm : 10.35 rack travel mm : +- 0.05 Tolerance mm

500 Rated speed rpm

# STARTING FUEL DELIVERY

Rated speed rpm : 20.50 rack travel mm : +- 0.50Tolerance mm Del. quantity cm3/1000 strokes : 121.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  10.0 Check tolerance

cm3/1000s. : +- 15.0

# LOW IDLE

Rated speed rpm : 450

Rack travel in mm : 5.40 Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 16.0

Tolerance

cm3/1000 strokes : +-2.0

Check tolerance

cm3/1000s. : +-4.5

Spreed Tolerance

3.5 cm3/1000 strokes :

Check tolerance

cm3/1000s. 5.5 End of test specification sheet

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#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 08.04.98 : ISO 4113

Combination No. : 0 401 846 529

Injection pump

Pump designation : PE6P120A320RS3186 EP type number : 0 411 826 756

Governor

Governer design. : RQV250...1025PA921

Governer no. : 0 421 813 787

Cust. part No. : 422719-P05 V. 06/92

Customer-spec. information

Customer : VOLVO-TRUCK

Motor

: TD102F (Q)

Power KW

: 220.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration

damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C

40

Tolerance °C

Overflow valve : 2 417 413 046

Inlet press. bar :

: 2.5 : +- 0.1

Tolerance bar

Overflow quantity

min. l/h : 120 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar

: 208.5

Tolerance bar :  $\leftarrow$  1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0

Tolerance bar : ← 1.0

Prestroke mm : 2.65
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.00

Tolerance mm : +- 0.50

Firing order

: 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: **←** 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no. : 1

	+	- Tolerance mm	: +- 0.05
BASIC SETTING		- Rated speed rpm	: 900
Rated speed rpm :	700 -	- guide sleeve - travel mm	: 6.50
_	40.45	- Tolerance mm	: + 0.10
Rack travel in mm : Tolerance mm : :	12.45 ← 0.05	<ul> <li>Rated speed rpm</li> <li>guide sleeve</li> </ul>	: 430
Del. quantity		- travel mm - Tolerance mm	: 3.65 : ← 0.15
cm3/1000 strokes :	198.0 -	- - Rated speed rpm	: 700
Tolerance cm3/1000 strokes :	<b>←</b> 1.0	- guide sleeve - travel mm - Tolerance mm	: 6.50 : + 0.10
Check tolerance cm3/1000s.	+ 4.0		
Spreed		- GUIDE SLEEVE POSI -	TION
Tolerance cm3/1000 strokes :	5.0	- - control lever - position degree - Rated speed rpm	: - 1 : 1080
Check tolerance cm3/1000s. :	9.0	- Rack travel in mm - Tolerance mm	: 16.50
Rated speed rpm :	250	- FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rack travel in mm : Tolerance mm : +	5.10 ⊢ 0.10	<ul><li>Rated speed rpm</li><li>Aneroid pressure</li></ul>	: 700
Del. quantity cm3/1000 strokes :	19.0	- hPa - Del. quantity	: 1000
Tolerance cm3/1000 strokes : 4	+	- cm3/1000 strokes - Tolerance	: 198.0
Check tolerance cm3/1000s. : 4	⊢ 5.0	- cm3/1000 strokes - Check tolerance	: +- 1.0
Spreed Tolerance	1	- cm3/1000s. - Spreed	: +- 4.0
cm3/1000 strokes : Check tolerance	5.0	Tolerance cm3/1000 strokes	: 5.0
cm3/1000s. :	7.0	- Check tolerance cm3/1000s.	
(B) SETTING OF INJECT	ION PUMP		
WITH GOVERNOR	+	CONTROL LEVER	
GUIDE SLEEVE TRAVEL		. control lever	
Rated speed rpm :	1080	position degree tolerance degree	
guide sleeve	8.40	. control lever	
	- 0.10	position degree tolerance degree	
Rated speed rpm : guide sleeve	250	RATED SPEED	
	1.25	rack travel mm	: 11.45

Rated speed rpm	: 1060
Tolerance 1/min	: +- 5
rack travel mm	: 4.00
Rated speed rpm	: 1135
Tolerance 1/min	: + 15
rack travel mm	: 0.50
Tolerance mm	: + 0.50
Rated speed rpm	: 1250

LOW IDLE	
control lever position degree tolerance degree	: 65.0 : + 4.0
control lever position degree tolerance degree	: 8.0 : +- 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 150
CRT mm min.	: > 6.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 5.10 : + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.45 : + 0.05

ANEROID/ALT]	ITUDE
COMPENSATOR	<b>TEST</b>

# SETTING

Rated speed rpm	:	500
Pressure hPa	:	1000
rack travel mm	:	12.45
Tolerance mm	:	+- 0.05

Rated speed rpm : 500 Pressure hPa : rack travel mm : 9.75

Tolerance	mm	: +-	0.10
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# **MEASUREMENT**

Rated speed rpm	:	500
Pressure hPa rack travel mm Tolerance mm	: : : +	510 2.35 - 0.20
Pressure hPa rack travel mm Tolerance mm	: +	100 0.25 - 0.05

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		700
Del. quantity			
cm3/1000 strokes	:		144.0
Tolerance			
cm3/1000 strokes	:	+	1.0
Check tolerance			
cm3/1000\$.	:	+-	4.0

# LOW IDLE

Rated speed rpm	•	250
Rack travel in mm Tolerance mm Del. quantity	: +	5.10 0.10
cm3/1000 strokes Tolerance	:	19.0
cm3/1000 strokes Check tolerance	: +-	2.5
cm3/1000s. Spreed	: +-	5.0
Tolerance cm3/1000 strokes Check tolerance	:	5.0
cm3/1000s.	:	7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 23.03.98 Test oil : 23.03.98

Combination No. : 0 401 856 701

Injection pump

Pump designation : PE6P110A721RS3101 EP type number : 0 411 816 725

Governor

Governer design. : RQV250/1200PA413 Governer no. : 0 421 813 333

Cust. part No. :

Customer-spec. information Customer : STEYR : WD615.67 Motor

Power KW

: 206.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

40 temp. °C : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : ← 0.1

Test nozzle holde

: 0 681 343 009 assembly

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 6.0

x inside diameter : 3.0 x Length mm :

**RFMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 : **←** 0.50 Tolerance mm

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : ← 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 12.05

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 163.0

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Tolerance tm3/1000 strokes : +- 1.0	guide sleeve travel mm : 3.90
Check tolerance	Tolerance mm : + 0.25
cm3/1000s. : + 4.0	Rated speed rpm : 740 guide sleeve
Spreed	guide sleeve travel mm : 4.41 Tolerance mm : +- 0.25
Tolerance	
cm3/1000 strokes : 4.0	Rated speed rpm : 1441 guide sleeve
Check tolerance	travel mm : 10.00
cm3/1000s. : 8.0	Tolerance mm : +- 0.25
	Rated speed rpm : 1560
Rated speed rpm : 250	guide sleeve travel mm : 11.50
+	Tolerance mm : +- 0.50
Rack travel in mm : 5.90 + Tolerance mm : +- 0.10 +	
Del. quantity	GUIDE SLEEVE POSITION
cm3/1000 strokes : 15.0	
cm3/1000 strokes : + 3.0	control lever
Check tolerance	position degree : - 1 Rated speed rpm : 1390
Spreed +	kated speed rpm : 1390
Tolerance +	Rack travel in mm: 16.50
cm3/1000 strokes : 4.0 + Check tolerance +	Tolerance mm : +- 1.30
cm3/1000s. : 7.0	
‡	CONTROL LEVER
(B) SETTING OF INJECTION PUMP	and a late
WITH GOVERNOR	control lever position degree : 45.0
	tolerance degree : +- 4.0
GUIDE SLEEVE TRAVEL	RATED SPEED
Rated speed rpm : 1256	rack travel mm : 11.00
guide sleeve + travel mm : 7.59 +	Rated speed rpm : 1245 Tolerance 1/min : +- 5
Tolerance mm : +- 0.25	
Rated speed rpm : 250 +	rack travel mm : 4.00 Rated speed rpm : 1350
guide sleeve	Tolerance 1/min : + 15
travel mm : 0.64 + Tolerance mm : + 0.25 +	rack travel mm : 0.50
+	Tolerance mm : +- 0.50
Rated speed rpm : 1060 + quide sleeve +	Rated speed rpm : 1450
travel mm : 6.07	
Tolerance mm : + 0.25	
Rated speed rpm : 564 guide sleeve	LOW IDLE
travel mm : 3.52 +	
- · · · · · · · · · · · · · · · · · · ·	
Tolerance mm : +- 0.25	control lever position degree : 13.0

Setting point w/	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 7.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 250 : 5.90 : +- 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 390
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.45 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 880 : 12.25 : ← 0.05
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 700 : 12.45 : +- 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 10.10 : ← 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 330 : 10.80 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 420 : 11.55 : ← 0.05

Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 170
Check speed 1/min Check	: > 80
speed 1/min	: < 190
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm	: 700 : 700
Del. quantity cm3/1000 strokes Tolerance	: 167.0
cm3/1000 strokes Check tolerance	: ← 2.0
cm3/1000s.	: ← 4.0
rack travel mm Tolerance mm	: 12.25 : + 0.05
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 700
cm3/1000 strokes Tolerance	: 122.0
cm3/1000 strokes	: ← 2.0
Check tolerance cm3/1000s.	: +- 4.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity	: 100 : 17.50 : ← 0.20
cm3/1000 strokes	: 220.0
Tolerance cm3/1000 strokes Check tolerance	: +- 15.0
cm3/1000s.	: +- 19.0
LOW IDLE	

Rated speed rpm	:		250
Rack travel in mm Tolerance mm	:	+	5.90 0.10
Del. quantity cm3/1000 strokes Tolerance	:		15.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s.	:	+-	5.5
Tolerance			
cm3/1000 strokes Check tolerance	:		4.0
cm3/1000s.	:		7.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98 Test oil : ISO 4113

Combination No. : 0 401 886 702

Injection pump

Pump designation : PE6P11DA721RS3341 EP type number : 0 411 816 796

Governor

Governer design. : RSV400...1200P1A527

: -1

Governer no. : 0 421 833 455

Cust. part No. : 615.60.08.0039

Customer-spec. information

Customer : SNF

Motor : WD615.88 Power KW : 228.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 457 413 012

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 0 681 343 009

Opening pressure

bar : 173.5 Tolerance bar : +- 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1200

Rack travel in mm : 13.80

Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 188.0

	+ Del. quantity
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 188.0 Tolerance
Check tolerance	+ cm3/1000 strokes : + 1.0 + Check tolerance
cm3/1000s. : + 4.0	- cm3/1000S. : + 4.0 
Spreed	+ Tolerance + cm3/1000 strokes : 4.0
Tolerance cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
	control lever
Rated speed rpm : 400	position degree : 116.0 tolerance degree : + 4.0
Rack travel in mm: 3.10	+ total and degree 4.0
Tolerance mm : + 0.10	+ RATED SPEED
Del. quantity cm3/1000 strokes : 14.0	+ rack travel mm : 12.80 + Rated speed rpm : 1245
cm3/1000 strokes : 14.0 Tolerance	+ Tolerance 1/min : + 5
cm3/1000 strokes : +- 3.0	+
Check tolerance	+ rack travel mm : 4.00
cm3/1000s. : +- 5.5	+ Rated speed rpm : 1300 + Tolerance 1/min : ← 15
Spreed Tolerance	Toterance Dimin : + 15
cm3/1000 strokes : 4.5	rack travel mm : 0.85
Check tolerance	Tolerance mm : + 0.55
cm3/1000s. : 7.5	Rated speed rpm : 1400
	+
(B) SETTING OF INJECTION PUMP	+
WITH GOVERNOR	LOW IDLE
	LOW IDEE
GUIDE SLEEVE POSITION	control lever
00000 000000 1 00017000	position degree : 76.0
	tolerance degree : + 4.0
control lever position degree : - 3	Setting point w/out bumper spring
Rated speed rpm : 800	+ Rated speed rpm : 400
Rack travel in mm : 0.50	rack travel mm : 3.60
Tolerance mm : + 0.20	Tolerance mm : + 0.10
governor spring pre-tension	Rated speed rpm : 100
click setting x : 4.75	CRT mm min. : > 9.50
	—— † Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	í
Rated speed rpm : 1200	+ Rated speed rpm : 400 + rack travel mm : 3.10
Aneroid pressure	Tolerance mm : +- 0.10
hPa : 1200	+
	+ rack travel mm : 2.00

Rated speed rpm Tolerance 1/min		
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1200 : 13.80 : ← 0.05	
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.80 : +- 0.10	
ANEROID/ALTITUDE COMPENSATOR TEST		<del></del>
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: -	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 360 : 10.90 : +- 0.20	
Pressure hPa rack travel mm Tolerance mm	: 600 : 12.80 : + 0.05	
FUEL DELIVERY CHA	ARACTERISTICS	_
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 700	
cm3/1000 strokes Tolerance		
cm3/1000 strokes Check tolerance cm3/1000s.	: +- 3.0 : +- 6.0	
Aneroid pressure hPa	: -	

Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		500 123.0 2.0 5.0	
STARTING FUEL DELI	IVERY	-	<u> </u>
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1730 strokes Tolerance cm3/1000 strokes	: <del>+-</del> :	205.0	
LOW IDLE		·	
Rated speed rpm	:	400	
Rack travel in mm Tolerance mm Del. quantity cm3/1000 strokes	: +-	3.10 0.10 14.0	
Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed		3.0	
	: +-	5.5	
Spreed			
Tolerance cm3/1000 strokes	:	4.5	
Tolerance	:	4.5 7.5	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 20.03.98 Test oil : ISO 4113

Combination No. : 0 401 946 701

Injection pump

Pump designation : PE6P120A320RS3240 EP type number : 0 411 826 786

Governor

Governer design. : RQV250...1025PA371

Governer no. : 0 421 813 303

Cust. part No. : 8193548

Customer-spec. information

Customer : VOLVO-TRUCK : TD122FLs Motor Power KW : 240.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Vibration damper

(RoBo diaphragm) : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : + 2.0

Overflow valve : 2 457 413 046

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 019 assembly

Opening pressure

: 208.5 Tolerance bar : ← 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm :  $\leftarrow$  0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

1	Telepope
Del. quantity	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes : 252.0	Check tolerance
	$cm3/1000s$ . : $\leftarrow$ 4.0
Tolerance	Spreed
cm3/1000 strokes : +- 1.0 +	Tolerance
Check telescopes	cm3/1000 strokes : 5.0 Check tolerance
Check tolerance + 4.0 +	cm3/1000s. : 9.0
4.0	
Spreed	
<b>T</b> 1	CONTROL LEUED
Tolerance + cm3/1000 strokes : 5.0 +	CONTROL LEVER
Clib/1000 strokes . J.0	control lever
Check tolerance	position degree : 65.0
cm3/1000s. : 9.0 +	tolerance degree : +- 4.0
	control loves
Ī	control lever position degree : 120.0
Rated speed rpm : 250	tolerance degree : +- 4.0
+	
Rack travel in mm: 6.60 +	RATED SPEED
Tolerance mm : +- 0.10	rack travel mm : 12.65
Del. quantity + cm3/1000 strokes : 20.0 +	Rated speed rpm : 1070 Tolerance 1/min : +- 5
cm3/1000 strokes : 20.0 +	Tolerance 1/min : +- 5
cm3/1000 strokes : +- 2.5	rack travel mm : 4.00
Check tolerance	Tolerance 1/min : + 15
cm3/1000s. : + 5.0 +	
Spreed +	rack travel mm : 0.50
Tolerance + cm3/1000 strokes : 5.0 +	Tolerance mm : + 0.50
cm3/1000 strokes : 5.0 + Check tolerance +	Rated speed rpm : 1250
cm3/1000s. : 7.0	
+	
+	
(B) SETTING OF INJECTION PUMP +	LOW IDLE
WITH GOVERNOR	
+	control lever
	position degree : 64.0
GUIDE SLEEVE POSITION +	tolerance degree : +- 4.0
Ť	control lever
control lever	position degree : 9.0
position degree : -1	tolerance degree : +- 4.0
Rated speed rpm : 1100	
+	Setting point w/out bumper spring
Rack travel in mm: 16.50	5
Tolerance mm : +- 1.30	Rated speed rpm : 100
<u> </u>	Testing:
FULL LOAD DELIVERY AT FULL LOAD STOP	· • · · · · · · · ·
	Rated speed rpm : 250
Rated speed rpm : 700	rack travel mm : 6.60
Aneroid pressure	Tolerance mm : +- 0.10
hPa : 1200 + Del. quantity +	Rated speed rpm : 315
cm3/1000 strokes : 252.0	natea speed i piii . Sis
,232 011 01102	

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm	:	500
Pressure hPa	:	1200
rack travel mm	:	13.65
Tolerance mm	: -	<b>-</b> 0.05

Rated speed rpm	:	500
Pressure hPa	:	-
rack travel mm	:	9.70
Tolerance mm	; +	- 0.10

# **MEASUREMENT**

Rated	speed	rpm	:	500
-------	-------	-----	---	-----

Pressure hPa	:	780
rack travel mm	:	3.30
Tolerance mm	: +	- 0.10

Pressure hPa	:	90
rack travel mm	:	0.25
Tolerance mm	: +-	0.05

# FUEL DELIVERY CHARACTERISTICS

A	2.4	
Anero	70	pressure

hPa	:		_
Rated speed rpm	:		700
Del. quantity cm3/1000 strokes	:		155.0
Tolerance	·		
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		20.50
Tolerance mm	:	+-	0.50
Del. quantity			
	:		290.0
Tolerance			
cm3/1000 strokes	:	+-	20.0
Check tolerance			
cm3/1000s.	:	+-	24.0

# LOW IDLE

Rated speed rpm	:		250	
Rack travel in mm Tolerance mm Del. quantity		+-	6.60 0.10	
cm3/1000 strokes	:		20.0	
Tolerance cm3/1000 strokes	:	+-	2.5	
Check tolerance cm3/1000S. Spreed	:	+-	5.0	
Tolerance cm3/1000 strokes	:		5.0	
Check tolerance cm3/1000S.	:		7.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.04.98 Edition Test oil : ISO 4113

Combination No. : 0 402 066 704

Injection pump

Pump designation : PES6P120A120RS3358 EP type number : 0 412 026 784

Governor

Governer design. : RSV475...1250P2A613

Governer no. : 0 421 833 501

Cust. part No. : 3927359

Customer-spec. information

Customer : CDC

: 6BTA-590 ELITE : 149.0 Motor

Power KW

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 2 417 413 093

Inlet press. bar :

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

: 208.5 bar Tolerance bar : ← 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

: **←** 0.10 tolerance mm

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery blocking

°NW after s.o.d. : 7.75

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250	
	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 12.45 + Tolerance mm: + 0.05 +	Rated speed rpm : 1250
Del. quantity	Aneroid pressure hPa : 1500
cm3/1000 strokes : 167.0	Del. quantity cm3/1000 strokes : 167.0
Tolerance	Tolerance
cm3/1000 strokes : + 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance + 3.0 +	cm3/1000s. : ← 3.0 Spreed
Spreed	Tolerance cm3/1000 strokes : 4.0
+	Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance	
cm3/1000s. : 7.5	CONTROL LEVER
-	control lever
<u> </u>	position degree : 108.0
Rated speed rpm : 475	tolerance degree : +- 4.0
Rack travel in mm: 5.50	RATED SPEED
Tolerance mm : + 0.10 +	rack travel mm : 11.45
Del. quantity +	Rated speed rpm : 1305
cm3/1000 strokes : 22.0	Tolerance 1/min : +- 5
Tolerance + cm3/1000 strokes : +- 2.0 +	rack travel mm : 4.00
Check tolerance	Rated speed rpm : 1405
cm3/1000s. : + 4.5	Tolerance 1/min : + 15
Spreed	
Tolerance +	rack travel mm : 0.85
cm3/1000 strokes : 6.0 +	Tolerance mm : ← 0.55
Check tolerance +	Rated speed rpm : 1530
cm3/1000s. : 9.0 +	
†	rack travel mm : 4.00
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 1415 Tolerance 1/min : +- 15
WITH GOVERNOR	Toterance TAMIN : +- 13
GUIDE SLEEVE POSITION	LOW IDLE
control lever	control lever
position degree : - 3	position degree : 84.0
Rated speed rpm : 800	tolerance degree : +- 4.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	Setting point w/out bumper spring
+	Rated speed rpm : 475
governor spring +	rack travel mm : 5.00 Tolerance mm : +- 0.10
pre-tension +	Tolerance mm : +- 0.10
click setting $x$ : 3.75 $+$	

Testing:	
Rated speed rpm rack travel mm	: 475 : 5.50 : ← 0.10
rack travel mm Rated speed rpm Tolerance 1/min	: 2.09 : 600
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1250 : 12.45 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.45 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1500 : 12.45 : ← 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 9.40 : ← 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 900 : 11.50 : +- 0.20

FUEL	DELIVERY	CHARACTERISTICS
	·	

Aneroid pressure hPa : 1500 Rated speed rpm : 750 Del. quantity cm3/1000 strokes : 181.5

Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000S.	: <del>-</del>	6.0
Spreed		
Tolerance		42.0
cm3/1000 strokes	:	12.0
Check tolerance cm3/1000s.		16.0
CIIS/ TOOOS.	•	10.0
Aneroid pressure		

Aneroid pressure			
hPa	:		_
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		106.5
Tolerance			
cm3/1000 strokes	:	+-	2.0
Check tolerance			
cm3/1000s.	:	+-	4.0

# STARTING FUEL DELIVERY

Rated speed rpm rack travel mm Tolerance mm	: : : +	100 20.25 - 0.75
Del. quantity cm3/1000 strokes Tolerance	:	165.0
cm3/1000 strokes Check tolerance	: +	- 20.0
cm3/1000s.	: +	- 25.0

# LOW IDLE

Rated speed rpm	:		475
Rack travel in mm Tolerance mm Del. quantity	:	+	5.50 0.10
cm3/1000 strokes	:		22.0
Tolerance cm3/1000 strokes	:	+	2.0
Check tolerance cm3/1000s.	:	+	4.5
Spreed Tolerance			
cm3/1000 strokes	:		6.0
Check tolerance	•		9.0

End of test specification sheet

K01

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.07.97 Test oil : ISO 4113

Combination No. : 0 402 646 665

Injection pump

Pump designation : PE6P130A720RS7354 EP type number : 0 412 636 835

Governor

Governer design. : RQV300...950PA1002

: -3K

Governer no. : 0 421 815 491

Cust. part No. :

Customer—spec. information

Customer : IVECO-FRANCE Motor : 8210.42K.3000

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05
Tolerance mm : +- 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 12.00Tolerance mm :  $\leftarrow 0.50$ 

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Check

tolerance °NW : + 0.40

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 11.95 Tolerance mm : +- 0.05

Del. quantity cm3/1000 strokes

cm3/1000 strokes : 242.0

Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 13.50
	+ Tolerance mm : +- 0.50
Check tolerance	+
cm3/1000s. : +- 4.0	
(ms/ 1000).	↓ GUIDE SLEEVE POSITION
Spend	1
Spreed	T
<b>-</b> 1	T
Tolerance	+ control lever
cm3/1000 strokes : 5.0	position degree : -1
	+ Rated speed rpm : 1190
Check tolerance	+
cm3/1000s. : 9.0	+ Rack travel in mm : 11.00
	Tolerance mm : +- 2.70
<del></del>	1 Voter direct min
Rated speed rpm : 275	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	+
Rack travel in mm : 5.30	+ Rated speed rpm : 950
Tolerance mm : + 0.10	+ Aneroid pressure
Del. quantity	+ hPa : 1000
cm3/1000 strokes : 32.0	Del. quantity
Tolerance	+ cm3/1000 strokes : 242.0
cm3/1000 strokes : $+-$ 3.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : +- 1.0
cm3/1000s. : +- 6.0	+ Check tolerance
Spreed	$\pm$ cm3/1000s. : +- 4.0
Tolerance	Spreed
cm3/1000 strokes : 8.0	+ Tolerance
Check tolerance	+ cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	+ Check tolerance
	+ cm3/1000s. : 9.0
	+
(B) SETTING OF INJECTION PUMP	‡
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	<u></u>
	CONTROL LEVER
	CONTROL LEVER
WITH GOVERNOR	+
	+ control lever
GUIDE SLEEVE TRAVEL	control lever position degree : 114.0
GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025	+ control lever
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : +- 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : +- 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25  Rated speed rpm : 500	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25  Rated speed rpm : 500 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.50 Tolerance mm : +- 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25  Rated speed rpm : 500	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25  Rated speed rpm : 500 guide sleeve travel mm : 500 guide sleeve travel mm : 500	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.50 Tolerance mm : +- 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25  Rated speed rpm : 500 guide sleeve	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.50 Tolerance mm : +- 0.50
WITH GOVERNOR  GUIDE SLEEVE TRAVEL  Rated speed rpm : 1025 guide sleeve travel mm : 9.00 Tolerance mm : + 0.15  Rated speed rpm : 300 guide sleeve travel mm : 1.64 Tolerance mm : + 0.20  Rated speed rpm : 764 guide sleeve travel mm : 6.22 Tolerance mm : + 0.25  Rated speed rpm : 500 guide sleeve travel mm : 500 guide sleeve travel mm : 500	control lever position degree : 114.0 tolerance degree : +- 4.0  RATED SPEED rack travel mm : 10.90 Rated speed rpm : 1010 Tolerance 1/min : +- 5 Check speed 1/min : +- 10  rack travel mm : 4.00 Rated speed rpm : 1110 Tolerance 1/min : +- 15 Check speed 1/min : +- 20  rack travel mm : 0.50 Tolerance mm : +- 0.50

### LOW IDLE

control lever

position degree : 69.0 tolerance degree : +-4.0

### Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.20

Testing:

275 Rated speed rpm : 5.30 rack travel mm : +- 0.10Tolerance mm

355 Rated speed rpm

TORQUE CONTROL

950 Rated speed rpm rack travel mm 11.95 : +- 0.05Tolerance mm

Rated speed rpm 700 rack travel mm 11.75 Tolerance mm : + - 0.10

Rated speed rpm : 550 11.30 rack travel mm : + 0.10Tolerance mm

Rated speed rpm : 300 10.80 rack travel mm : +- 0.30 Tolerance mm

### ANEROID/ALTITUDE COMPENSATOR TEST

#### SETTING

Rated speed rpm 950 1000 Pressure hPa 11.95 rack travel mm : +- 0.05 Tolerance mm

950 Rated speed rpm Pressure hPa rack travel mm 8.30 Tolerance mm : + 0.40

# **MEASUREMENT**

Rated speed rpm 950

Pressure hPa 290 rack travel mm 9.35 Tolerance mm : **←** 0.20

Pressure hPa 500 rack travel mm 11.10 : **←** 0.05 Tolerance mm

#### Start interlock

180 Rated speed rpm : > Rated speed rpm 220 : <

Check

speed 1/min : > 160

Check

speed 1/min : < 240

#### FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

1000 Rated speed rpm 550 rack travel mm 11.30 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 262.0 Tolerance cm3/1000 strokes : +-

Check tolerance cm3/1000s.: +- 6.0

Aneroid pressure

Rated speed rpm 550 Del. quantity 171.0 cm3/1000 strokes :

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance cm3/1000s.

4.0

#### STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 20.25 Tolerance mm : **←** 0.75 Del. quantity 160.0

cm3/1000 strokes :

Tolerance cm3/1000 strokes : + 15.0 Check tolerance

: +- 19.0 cm3/1000s.

LOW IDLE

Rated speed rpm : 275

Rack travel in mm: 5.30 : + 0.10 Tolerance mm

Del. quantity cm3/1000 strokes : 32.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 07.04.98 Test oil : ISO 4113

Combination No. : 0 402 646 667

Injection pump

Pump designation : PE6P12OA32ORS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278K

Governer no. : 0 421 815 509

Cust. part No. : 1310221/1

Customer—spec. information Customer : DAF Motor : XF 315 M Power KW : 315.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5
Tolerance bar : +- 0.1

Overflow quantity

min. l/h : 140 Tolerance l/h : +- 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : +- 0.05
Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : + 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 13.40 Tolerance mm : + 0.05

		∔ guide sleeve
Del. quantity cm3/1000 strokes	: 318.0	travel mm : 3.92 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes	· ← 1.0	Rated speed rpm : 1310 guide sleeve
Check tolerance		travel mm : 13.50 + Tolerance mm : +- 0.50
cm3/1000s.	: +- 4.0	
Spreed		GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes	: 5.0	control lever position degree : - 1
Check tolerance cm3/1000s.	: 9.0	Rated speed rpm : 1158
		Rack travel in mm: 12.00 Tolerance mm: + 2.70
Rated speed rpm	: 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 3.80	T TOLL LOAD DELIVERY AT TOLL LOAD STOP
Tolerance mm	: <b>←</b> 0.10	Rated speed rpm : 980
Del. quantity		+ Aneroid pressure
cm3/1000 strokes	: 17.0	+ hPa : 1500
Tolerance		+ Del. quantity
cm3/1000 strokes	: <del></del>	+ cm3/1000 strokes : 318.0
Check tolerance		+ Tolerance
cm3/1000s.	: +- 6.0	+ cm3/1000 strokes : + 1.0
Spreed		+ Check tolerance
Tolerance		+ cm3/1000s. : + 4.0
cm3/1000 strokes	: 8.0	+ Spreed
Check tolerance		+ Tolerance
cm3/1000S.	: 12.0	+ cm3/1000 strokes : 5.0
		+ Check tolerance
		+ cm3/1000s. : 9.0
(B) SETTING OF INWITH GOVERNOR	JECTION PUMP	<u></u>
GUIDE SLEEVE TRAVI	FI	CONTROL LEVER
		- control lever
Rated speed rpm	: 1077	position degree : 119.0
guide sleeve		tolerance degree : + 4.0
travel mm	: 10.24	+
Tolerance mm	: + 0.15	+ RATED SPEED
		+ rack travel mm : 12.40
Rated speed rpm	: 275	+ Rated speed rpm : 1040
guide sleeve		+ Tolerance 1/min : +- 5
travel mm	: 2.04	+ Check
Tolerance mm	: <b>+</b> 0.20	speed 1/min : +- 10
Rated speed rpm guide sleeve	: 704	rack travel mm : 4.00 Rated speed rpm : 1145
travel mm	: 6.53	+ Tolerance 1/min : +- 15
Tolerance mm	: +- 0.25	- Check
		speed 1/min : +- 20
Rated speed rpm	: 400	rack travel mm : 0.50

Tolerance mm Rated speed rpm	: +- 0.50 : 1275	t	
Kateu speed rpm	. 1213	ANEROID/ALTITUDE COMPENSATOR TEST	
LOW IDLE		SETTING	
control lever position degree tolerance degree	: 72.0 : +- 4.0	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1500
Setting point w/c	out bumper spring	Rated speed rpm Pressure hPa	: 980 : -
Rated speed rpm	: 175	rack travel mm Tolerance mm	
CRT mm min.	: > 6.60	+ MEASUREMENT	
Testing:	275	Rated speed rpm	: 980
Rated speed rpm rack travel mm Tolerance mm	: 3.80	Pressure hPa rack travel mm Tolerance mm	: 520 : 12.20 : + 0.05
Rated speed rpm	: 300	+ Pressure hPa + rack travel mm	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 13.40	Tolerance mm	
Rated speed rpm	: 750 : 13 35	+ FUEL DELIVERY CHA	RACTERISTICS
rack travel mm Tolerance mm	: <b>←</b> 0.05	Aneroid pressure hPa	: 1500
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.05 : +- 0.10	Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
Rated speed rpm rack travel mm	: 600 : 12.55	cm3/1000 strokes Check tolerance	: ← 2.0
Tolerance mm	: <del></del> 0.10	- cm3/1000s. - Spr <del>eed</del>	: +- 5.0
Rated speed rpm rack travel mm	: 12.05	Tolerance cm3/1000 strokes	: 8.0
Tolerance mm Rated speed rpm		theck tolerance cm3/1000s.	: 12.0
rack travel mm Tolerance mm Rated speed rpm	: 13.40 : + 0.10	rack travel mm Tolerance mm	
rack travel mm Tolerance mm	: 13.80	Aneroid pressure	· _
		Rated speed rpm Del. quantity	: 600
		cm3/1000 strokes	: 195.0

cm3/1000 strokes	: +-	1.0
Check tolerance cm3/1000s. Spreed	: +-	4.0
Tolerance cm3/1000 strokes	:	8.0
Check tolerance cm3/1000s.	:	12.0

# LOW IDLE

Rated speed rpm	:		275	
Rack travel in mm Tolerance mm	:	+-	3.80 0.10	
Del. quantity cm3/1000 strokes Tolerance	:		17.0	
cm3/1000 strokes Check tolerance	:	+-	3.0	
cm3/1000s. Spreed	:	+-	6.0	
Tolerance cm3/1000 strokes	:		8.0	
Check tolerance cm3/1000s.	:		12.0	

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 07.04.98 Edition Test oil : ISO 4113

Combination No. : 0 402 646 668

Injection pump

Pump designation : PE6P12OA32ORS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1278

: -1K Governer no. : 0 421 815 510

Cust. part No. : 1310220/1

Customer-spec. information Customer : DAF : XF 280 M Motor

Power KW : 280.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

: 40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 145 Tolerance l/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : + 1.0

Prestroke mm : 4.45 Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : **←** 0.50

Check

: **←** 0.75 tolerance °NW

Start of delivery mark

Tolerance : +- 0.10

Check

: +- 0.75 tolerance °NW

Barrel no. : 1

# BASIC SETTING

Rated speed rpm : 750

Rack travel in mm: 12.60

K10

Tolerance mm	: ← 0.05	- quide sleeve
rocerance min		- travel mm : 3.92
Del. quantity cm3/1000 strokes	: 303.0	- Tolerance mm : +- 0.25 - - Rated speed rpm : 1310
Tolerance		- Rated speed rpm . 1310 - guide sleeve
cm3/1000 strokes	: +- 1.0	- travel mm : 13.50 - Tolerance mm : + 0.50
Check tolerance		
cm3/1000s.	: +- 4.0	- GUIDE SLEEVE POSITION
Spreed		
Tolerance	+	- control lever
cm3/1000 strokes	: 5.0	- position degree : - 1
Check tolerance		- Rated speed rpm : 1171
cm3/1000s.	: 9.0	Rack travel in mm : 10.70 Tolerance mm : +- 2.00
	1	
Rated speed rpm	: 275	- FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	,	- Rated speed rpm : 750
Tolerance mm	: +- 0.10	- Aneroid pressure
Del. quantity cm3/1000 strokes	: 17.0	- hPa : 1500 - Del. quantity
Tolerance		- cm3/1000 strokes : 303.0
cm3/1000 strokes	: +- 3.0	- Tolerance
Check tolerance	+	- cm3/1000 strokes : + 1.0
cm3/1000s.	: ← 6.0	- Check tolerance - cm3/1000s. : +- 4.0
Spreed Tolerance	1	- Spreed
cm3/1000 strokes	: 8.0	- Tolerance
Check tolerance	+	- cm3/1000 strokes : 5.0
cm3/1000s.	: 12.0	- Check tolerance
	1	- cm3/1000s. : 9.0
(B) SETTING OF IN WITH GOVERNOR	JECTION PUMP	
WITH GOVERNOR	+	CONTROL LEVER
CUITAD ALCOHOL STATE	1	
GUIDE SLEEVE TRAV	/EL I	control lever position degree : 118.0
Rated speed rpm	: 1062	tolerance degree : +- 4.0
guide sleeve	+	
travel mm	: 10.04	RATED SPEED
Tolerance mm	: +- 0.15 †	rack travel mm : 11.35 Rated speed rpm : 1050
Rated speed rpm	: 275	Tolerance 1/min : +- 5
guide sleeve	+	Check
travel mm	: 2.04	speed 1/min : + 10
Tolerance mm	: ← 0.20	· rack travel mm : 4.00
Rated speed rpm	: 697	Rated speed rpm : 4.00
guide sleeve	1	Tolerance 1/min : +- 15
travel mm	: 6.48	Check
Tolerance mm	: +- 0.25	speed 1/min : +- 20
Rated speed rpm	: 400	rack travel mm : 0.50

Tolerance mm	: ← 0.50
Rated speed rpm	: 1275
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 6.50
Testing:	
Rated speed rpm	: 275
rack travel mm	: 3.90
Tolerance mm	: + 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.60 : ← 0.05
Rated speed rpm	: 980
rack travel mm	: 12.35
Tolerance mm	: ← 0.10
Rated speed rpm	: 900
rack travel mm	: 12.60
Tolerance mm	: ← 0.10
Rated speed rpm	: 700
rack travel mm	: 12.30
Tolerance mm	: + 0.10
Rated speed rpm	: 600
rack travel mm	: 11.80
Tolerance mm	: + 0.10
Rated speed rpm	: 500
rack travel mm	: 11.40
Tolerance mm	: +- 0.10
Rated speed rpm	: 1000
rack travel mm	: 12.35
Tolerance mm	: ← 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm	:	775
Pressure hPa	:	1500
rack travel mm	:	12.65
Tolerance mm	: +	<b>⊢</b> 0.05
Pated aread rom		775

Rated speed rpm : 775
Pressure hPa : rack travel mm : 8.50
Tolerance mm : + 0.20

# MEASUREMENT

Rated speed rpm	:	775
Pressure hPa rack travel mm Tolerance mm	: +-	450 12.10 - 0.05
Pressure hPa rack travel mm Tolerance mm	: : : +-	170 9.90 - 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1500 : 980 : 272.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: +− 2.0 : +− 5.0
Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	: 8.0 : 12.0
rack travel mm Tolerance mm	: 12.60 : + 0.10
Aneroid pressure	

Rated speed rpm : 600
Del. quantity
cm3/1000 strokes : 184.0

Tolerance
cm3/1000 strokes : +- 1.0
Check tolerance
cm3/1000s. : +- 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

### LOW IDLE

Rated speed rpm : 275 3.90 Rack travel in mm : Tolerance mm : + 0.10 Del. quantity 17.0 cm3/1000 strokes : Tolerance 3.0 cm3/1000 strokes : +-Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 06.04.98 Test oil : ISO 4113

Combination No. : 0 402 646 670

Injection pump

Pump designation : PE6P120A320RS7438 EP type number : 0 412 626 965

Governor

Governer design. : RQV275...1150PA1296K

Governer no. : 0 421 815 523

Cust. part No. : 1316183

Customer-spec. information : DAF Customer : PF 235 M Motor : 230.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

: 1 417 413 000 Overflow valve

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity
min 1/h : 150 Tolerance l/h: +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 089

8.0 Outside diameter :

x inside diameter : 3.0 x Length mm : 600

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 15.0 Tolerance bar : + 1.0

: 4.85 Prestroke mm : +- 0.05 Tolerance mm

Check

tolerance mm : **←** 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

: **←** 0.10 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 850

		+
Rack travel in mm Tolerance mm	1: 13.50 : + 0.05	Rated speed rpm : 450 guide sleeve travel mm : 3.85
Del. quantity		_
cm3/1000 strokes	: 259.0	Rated speed rpm : 1480
Tolerance	**************************************	guide steeve
cm3/1000 strokes	: +- 1.0	travel mm : 13.50
		+ Tolerance mm : +- 0.50
Check tolerance cm3/1000s.	: + 4.0	
Spreed		_
Tolerance		T control lever
cm3/1000 strokes	: 5.0	position degree : - 1
CIID/ 1000 Strokes	. 3.0	Rated speed rpm : 1321
Check tolerance		- Nated Speed (pii) . (Set
cm3/1000s.	: 9.0	Rack travel in mm: 12.25
uns/ 10005.	. ,	+ Tolerance mm : + 1.30
		- Total unite him
Rated speed rpm	: 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm	: 5.00	Rated speed rpm : 850
Tolerance mm	: + 0.10	Aneroid pressure
Del. quantity		+ hPa : 1500
cm3/1000 strokes	: 16.0	Del. quantity
Tolerance	. 10.0	- cm3/1000 strokes : 259.0
cm3/1000 strokes	: <del>←</del> 3.0	+ Tolerance
Check tolerance		cm3/1000 strokes : + 1.0
cm3/1000S.	: <del>+-</del> 6.0	Check tolerance
	. — 0.0	- cm3/1000s. : +- 4.0
Spreed		
Tolerance	. 8.0	+ Spreed
	: 8.0	+ Tolerance
Check tolerance	42.0	+ cm3/1000 strokes : 5.0
cm3/1000s.	: 12.0	+ Check tolerance
		+ cm3/1000s. : 9.0
		†
(B) SETTING OF IN	JECTION PUMP	+
WITH GOVERNOR		
		+ CONTROL LEVER
		†
GUIDE SLEEVE TRAVI	EL	control lever
	4004	position degree : 119.0
Rated speed rpm	: 1201	tolerance degree : +- 4.0
guide sleeve	40.00	†
travel mm	: 10.07	+ RATED SPEED
Tolerance mm	: +- 0.15	+ rack travel mm : 12.20
		+ Rated speed rpm : 1185
Rated speed rpm	: 275	† Tolerance 1/min : +- 5
guide sleeve		+ Check
travel mm	: 1.71	+ speed 1/min : +- 10
Tolerance mm	: +- 0.20	+
		rack travel mm : 4.00
Rated speed rpm	: 811	+ Rated speed rpm : 1310
guide sleeve		+ Tolerance 1/min : + 15
travel mm	: 6.79	+ Check
Tolerance mm	: <del>+-</del> 0.25	+ speed 1/min : +- 20

rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.70
LOW IDLE	
control lever position degree tolerance degree	: 70.0 : +- 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 7.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 5.00 : ← 0.10
Rated speed rpm	: 395
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 850 : 13.50 : ← 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1130 : 13.20 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 800 : 13.45 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 650 : 12.70 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 11.90 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 13.20 : +- 0.10

ANEROID/ALTIT	TUDE
COMPENSATOR 1	<b>TEST</b>

# SETTING

Rated speed rpm	:	875
Pressure hPa	:	1500
rack travel mm	:	13.50
Tolerance mm	:	+- 0.10

Rated speed rpm	:	875
Pressure hPa	:	-
rack travel mm	:	9.15
Tolerance mm	: +	- 0.10

# **MEASUREMENT**

Rated speed rpm	:	875
Pressure hPa rack travel mm Tolerance mm	: +-	450 12.10 0.05
Pressure hPa rack travel mm Tolerance mm	: : : +-	150 9.70

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm	: 1500 : 1130
Del. quantity cm3/1000 strokes Tolerance	: 232.0
cm3/1000 strokes	: +- 2.0
Check tolerance cm3/1000S. Spreed	: +- 5.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
rack travel mm Tolerance mm	: 13.25 : + 0.10
Aneroid pressure	: -
Rated speed rpm Del. quantity	: 600
cm3/1000 strokes	: 170.0

Tolerance cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000S. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000S. : 12.0

LOW IDLE

Rated speed rpm : 275 5.00 Rack travel in mm : Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 16.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 07.04.98 : ISO 4113

Combination No. : 0 402 646 671

Injection pump

Pump designation : PE6P120A320RS7421 EP type number : 0 412 626 956

Governor

Governer design. : RQV275...1150PA1297K

Governer no. : 0 421 815 524

Cust. part No. : 1316184/1

Customer-spec. information Customer : DAF

: PF 212 M Motor

Power KW

: 205.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

Tolerance °C

: + 2.0

Overflow valve : 1 417 413 000

Inlet press. bar :

1.5

Tolerance bar : + 0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 20.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

208.5

Tolerance bar : ← 1.5

K18

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm :

600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : + 1.0

Prestroke mm :

4.85

Tolerance mm

: +- 0.05

Check

tolerance mm

: **←** 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order

: 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

# Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW

: +- 0.75

Barrel no.

: 1

# BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.35

Tolerance mm : +- 0.05

-	l guide sleeve
Del. quantity cm3/1000 strokes : 231.0	travel mm : 3.85 Tolerance mm : +- 0.25
Tolerance cm3/1000 strokes : +- 1.0	Rated speed rpm : 1480 guide sleeve travel mm : 13.50
Check tolerance cm3/1000s. : +- 4.0	Tolerance mm : + 0.50
Spreed	GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	control lever position degree : - 1
Check tolerance cm3/1000s. : 9.0	Rated speed rpm : 1329
	Rack travel in mm : 11.10 Tolerance mm : +- 2.70
Rated speed rpm : 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 4.90	- TOLL LOAD DELIVERY AT TOLL LOAD STOP
Toterance mm : +- 0.10	Rated speed rpm : 850
Del. quantity - cm3/1000 strokes : 16.0 -	Aneroid pressure - hPa : 1500
Tolerance	Del. quantity
cm3/1000 strokes : + 3.0	cm3/1000 strokes : 231.0
Check tolerance - 6.0 - 6.0	- Tolerance - cm3/1000 strokes : +- 1.0
Spreed	Check tolerance
Tolerance	cm3/1000s. : +- 4.0
cm3/1000 strokes : 8.0	- Spreed - Tolerance
cm3/1900s. : 12.0	- cm3/1000 strokes : 5.0
+	Check tolerance
(B) SETTING OF INJECTION PUMP	- cm3/1000s. : 9.0
WITH GOVERNOR	
-	CONTROL LEVED
GUIDE SLEEVE TRAVEL	- CONTROL LEVER
+	- control lever
Rated speed rpm : 1206	position degree : 118.0
guide sleeve travel mm : 10.12	tolerance degree : +- 4.0
Tolerance mm : + 0.15	- RATED SPEED
Dated and an a 275	rack travel mm : 11.10
Rated speed rpm : 275 quide sleeve	- Rated speed rpm : 1195 - Tolerance 1/min : +- 5
travel mm : 1.71	- Check
Tolerance mm : +- 0.20	- speed 1/min : +- 10
Rated speed rpm : 813	- rack travel mm : 4.00
guide sleeve + travel mm : 6.81 +	- Rated speed rpm : 1300 - Tolerance 1/min : +- 15
Tolerance mm : + 0.25	- Check
+	- speed 1/min : +- 20
Rated speed rpm : 450	- - rack travel mm : 0.70

Tolerance mm Rated speed rpm	: ← 0.70 : 1400
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : + 4.0
Setting point w/o	ut bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 7.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 4.90 : + 0.10
Rated speed rpm	: 350
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm Rated speed rpm rack travel mm Tolerance mm	: 12.10 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 12.15 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 800 : 12.25 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 650 : 11.50 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.85 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1150 : 12.10 : +- 0.10

ANEROID/ALTITUDE	
COMPENSATOR TEST	

# SETTING

Rated speed rpm	:	875
Pressure hPa	:	1500
rack travel mm	:	12.35
Tolerance mm	: +	- 0.10
Pated speed rom	•	875

Rated speed rpm : 875
Pressure hPa : rack travel mm : 8.00
Tolerance mm : + 0.10

# MEASUREMENT

MENSONEMERAL		
Rated speed rpm	:	875
Pressure hPa	:	420
rack travel mm	:	11.35
Tolerance mm	: +	- 0.05
Pressure hPa	:	150
rack travel mm	:	9.20
Tolerance mm	: +	- 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm	: 1500 : 1130
Del. quantity cm3/1000 strokes Tolerance	: 207.0
cm3/1000 strokes Check tolerance	: +- 2.0
cm3/1000s. Spreed Tolerance	: +- 5.0
cm3/1000 strokes Check tolerance	: 8.0
cm3/1000s.	: 12.0
rack travel mm Tolerance mm	: 12.15 : + 0.10
Aneroid pressure hPa Rated speed rpm	: - : 600
Del. quantity cm3/1000 strokes	: 138.0

cm3/1000 strokes	: +-	1.0
Check tolerance cm3/1000s.	: +-	4.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	8.0
cm3/1000s.	:	12.0

# LOW IDLE

Rated speed rpm	:		275
Rack travel in mm Tolerance mm	:	+	4.90 0.10
Del. quantity cm3/1000 strokes	:		16.0
Tolerance cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s.	:	+-	6.0
Tolerance cm3/1000 strokes	:		8.0
Check tolerance cm3/1000s.	:		12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 03.04.98 Edition Test oil : ISO 4113

Combination No. : 0 402 646 673

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1300K

Governer no. : 0 421 815 527

Cust. part No. : 1315099

Customer-spec. information

Customer : DAF
Motor : XF 250 M Motor Power KW : 250.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 150
Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 15.0 Tolerance bar : +- 1.0

Prestroke mm : 4.45
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

: 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : **←** 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 1

### BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.00 Tolerance mm : + 0.05  Del. quantity cm3/1000 strokes : 289.0  Tolerance cm3/1000 strokes : + 1.0	Rated speed rpm : 400 guide sleeve travel mm : 3.92 Tolerance mm : + 0.25 Rated speed rpm : 1310 guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000S. : + 4.0	
Spreed	- GUIDE SLEEVE POSITION
Tolerance cm3/1000 strokes : 5.0	- - control lever - position degree : - 1 - Rated speed rpm : 1181
Check tolerance cm3/1000S. : 9.0	Rack travel in mm : 10.00 Tolerance mm : + 2.00
Rated speed rpm : 275	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm: 3.90 Tolerance mm: + 0.10 Del. quantity	Rated speed rpm : 750 Aneroid pressure hPa : 1500
cm3/1000 strokes : 17.0  Tolerance cm3/1000 strokes : +- 3.0	Del. quantity cm3/1000 strokes : 289.0 Tolerance
Check tolerance cm3/1000s. : + 6.0 Spreed	cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0
Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0	Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance
cm3/1000s. : 12.0	- cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	CONTROL LEVER
GUIDE SLEEVE TRAVEL	control lever position degree : 118.0
Rated speed rpm : 1072 guide sleeve	tolerance degree : +- 4.0
travel mm : 10.16  Tolerance mm : + 0.15	RATED SPEED rack travel mm : 10.50 Rated speed rpm : 1045
Rated speed rpm : 275 guide sleeve	Tolerance 1/min : +- 5 Check
travel mm : 2.04 + Tolerance mm : + 0.20	speed 1/min : +- 10
Rated speed rpm : 701 guide sleeve	rack travel mm : 4.00 Rated speed rpm : 1140 Tolerance 1/min : +- 15
travel mm : 6.52 + Tolerance mm : + 0.25 +	Check speed 1/min : +- 20

rack travel mm Tolerance mm Rated speed rpm	: +- 0.70
LOW IDLE	
control lever position degree tolerance degree	: 70.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 6.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 3.90 : ← 0.10
Rated speed rpm	: 310
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.00 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 980 : 11.50 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 900 : 11.70 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.00 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.40 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 10.90 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm	;	775
Pressure hPa	;	1500
rack travel mm	:	12.00
Tolerance mm	: -	<b>⊢</b> 0.10

Rated speed rpm : 775 Pressure hPa : - rack travel mm : 8.30 Pressure hPa Tolerance mm : + 0.20

# MEASUREMENT

Rated speed rpm	: 775
Pressure hPa	: 460
rack travel mm	: 11.00
Tolerance mm	: + 0.05
Pressure hPa	: 250
rack travel mm	: 9.30
Tolerance mm	: ← 0.10

# FUEL DELIVERY CHARACTERISTICS

	~~~~	
Aneroid pressure		
hPa	:	1500
Rated speed rpm		980
Del. quantity		
cm3/1000 strokes	:	250.0
Tolerance		
cm3/1000 strokes	: +-	- 2.0
Check tolerance		
cm3/1000s.	: +-	- 5.0
Spreed		
Tolerance		0.0
cm3/1000 strokes	:	8.0
Check tolerance		42.0
cm3/1000s.	:	12.0
rack travel mm	:	11.70
Tolerance mm	: +-	- 0.10
Aneroid pressure		
hPa	:	_
Rated speed rpm	:	600

Del. quantity cm3/1000 strokes : 188.0

Tolerance cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0

LOW IDLE

Rated speed rpm : 275 Rack travel in mm : 3.90 Tolerance mm : ← 0.10 Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : +- 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance : 12.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 06.04.98 : ISO 4113

Combination No. : 0 402 646 681

Injection pump

Pump designation : PE6P120A320RS7412 EP type number : 0 412 626 953

Governor

Governer design. : RQV275...1000PA1381K

Governer no. : 0 421 815 561

Cust. part No. : 1349846/0

Customer-spec. information Customer : DAF

: XF 250 Motor Power KW : 250.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C 2.0

Overflow valve : 1 417 413 000

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

bar : 208.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar : 15.0 Tolerance bar : ← 1.0

Prestroke mm : 4.45 Tolerance mm : +- 0.05

Rack travel in mm : 11.50 Tolerance mm : + 0.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance  $^{\circ}NW$  : + 0.75

Start of delivery mark

Tolerance : **←** 0.10

Check

tolerance °NW : +- 0.70

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.50 Tolerance mm :  $\leftarrow$  0.10

Del. quantity

cm3/1000 strokes : 250.0

		+ Rated speed rpm	: 1282
Tolerance		+ guide sleeve	
cm3/1000 strokes	: <b>←</b> 1.0	+ travel mm	: 12.00
		+ Tolerance mm	: <del>+-</del> 0.25
Check tolerance		+	
cm3/1000S.	: <del>←</del> 4.0	+ Rated speed rpm	: 1370
		+ guide sleeve	
Spreed		+ travel mm	: 13.50
		+ Tolerance mm	: +- 0.50
Tolerance		1	
cm3/1000 strokes	: 5.0		······································
			ITION
Check tolerance		+	
	: 9.0	Rated speed rpm	: 1263
		+	
		+ Rack travel in mm	n: 10.50
		+ Tolerance mm	
Rated speed rpm	: 275	-	
		+	
Rack travel in mm	: 3.90	FULL LOAD DELIVER	RY AT FULL LOAD STOR
Tolerance mm		+	
Del. quantity		Rated speed rpm	: 980
cm3/1000 strokes	: 17.0	+ Aneroid pressure	
Tolerance		+ hPa	: 1500
cm3/1000 strokes	: +- 3.0	Del. quantity	
Check tolerance		+ cm3/1000 strokes	: 250.0
cm3/1000s.	: <del>+-</del> 6.0	Tolerance	
Spreed		+ cm3/1000 strokes	: +- 1.0
Tolerance		+ Check tolerance	
cm3/1000 strokes	: 8.0	+ cm3/1000s.	: +- 4.0
Check tolerance		+ Spreed	
_ ' '	: 12.0	+ Tolerance	
	. , , , , ,	+ cm3/1000 strokes	: 5.0
		+ Check tolerance	
(B) SETTING OF INJE	ECTION PLIMP	+ cm3/1000s.	: 9.0
WITH GOVERNOR	2012011 . 0. #	1	7.0
W2117 GOVE.111011		1	
		<u> </u>	
GUIDE SLEEVE TRAVEL	L	+ CONTROL LEVER	
		+	
Rated speed rpm :	: 1055	→ control lever	
guide sleeve		position degree	: 110.0
travel mm :	: 7.47	+ tolerance degree	: +- 4.0
Tolerance mm :	: <del>+-</del> 0.15	+	
		+ RATED SPEED	
Rated speed rpm :	: 275	<pre>+ rack travel mm</pre>	: 10.50
guide sleeve		+ Rated speed rpm	: 1045
travel mm :	: 2.04	† Tolerance 1/min	: +- 5
Tolerance mm :	: <del></del> 0.20	+ Check	
		+ speed 1/min	: +- 10
Rated speed rpm :	: 820	+	
guide sleeve		🕂 🛮 rack travel mm	: 4.00
travel mm :	: 5.14	+ Rated speed rpm	: 1130
	: +- 0.25	+ Tolerance 1/min	: +- 15
		Check	
Rated speed rpm :	: 480	+ speed 1/min	: +- 20
guide sleeve		+	
travel mm :	3.34	rack travel mm	: 0.70
	+- 0.25	+ Tolerance mm	: + 0.70
•	_ · <del></del>	+ Rated speed rpm	: 1275
			<del>-</del> · ·

LOW IDLE	
control lever position degree tolerance degree	: 74.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 175
CRT mm min.	: > 7.00
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 275 : 3.90 : ← 0.10
Rated speed rpm	: 300
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 980 : 11.50 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 900 : 11.70 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 750 : 12.00 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.00 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 600 : 11.50 : + 0.10
Rated speed rpm rack travel mm Tolerance mm	: 500 : 11.00 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 775 : 1500

rack travel mm Tolerance mm	:	+-	12.00 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	:	+-	775 460 11.00 0.05
MEASUREMENT			
Rated speed rpm	:		775
Pressure hPa rack travel mm Tolerance mm	:	+	8.30 0.20
Pressure hPa rack travel mm Tolerance mm	:	+-	250 9.30 0.10

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 1500 : 750 : 12.00 : + 0.05 : 289.0 : + 2.0 : + 6.0 : 10.0
	. 13.0
Aneroid pressure hPa	: -
Rated speed rpm Del. quantity	600
cm3/1000 strokes	: 188.0
Tolerance cm3/1000 strokes	: + 1.0
Check tolerance cm3/1000s. Spreed	: +- 4.0
Tolerance cm3/1000 strokes	: 10.0
Check tolerance cm3/1000s.	: 15.0

# LOW IDLE

Rated speed rpm	:		275
Rack travel in mm Tolerance mm	:	+-	3. <i>9</i> 0 0.10
Olion 1000 Oct Olico	:		17.0
Tolerance cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	6.0
Tolerance cm3/1000 strokes	:		8.0
Check tolerance cm3/1000s.	:		12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.03.95 Test oil : ISO 4113

Combination No. : 0 402 648 940

Injection pump

Pump designation : PE8P12OA32OLS7847-3 EP type number : 0 412 628 886

Governor

Governer design. : RQ300/950PA1032-11

Governer no. : 0 421 801 737

Cust. part No. : 0240740602

Customer—spec. information
Customer : MB-NFZ
Motor : 0M402 LA
Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Tolerance l/h: + 10.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05
Check

uneck

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180 : -225-270-315

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 8

#### BASIC SETTING

Rated speed rpm : 550

		ı	
Rack travel in mm	: 14.40	Rated speed rpm : 800	
	: ← 0.05	guide sleeve	
<b>.</b>		+ travel mm : 6.09 + Tolerance mm : + 0.10	
Del. quantity cm3/1000 strokes	: 226.0	† Tolerance mm : ← 0.10	
CIRD/ 1000 Strokes	. 220.0	Rated speed rpm : 415	
Tolerance		guide sleeve	
	: <del>+</del> 1.0	+ travel mm : 3.72	
		Tolerance mm : + 0.10	
Check tolerance		5.4.4	
cm3/1000s.	: +- 4.0	+ Rated speed rpm : 550 + guide sleeve	
Spreed		travel mm : 6.00	
Spi eed		+ Tolerance mm : +- 0.10	
Tolerance		+	
cm3/1000 strokes	: 6.0	Rated speed rpm : 1160	
		guide sleeve	
Check tolerance	: 9.0	+ travel mm : 11.50 + Tolerance mm : + 0.50	
cm3/1000s.	: 9.0	Toterance min : 7 0.30	
		Rated speed rpm : 864	
		+ guide sleeve	
Rated speed rpm	: 300	+ travel mm : 6.26	
	5.00	Tolerance mm : + 0.10	
Rack travel in mm		†	
Tolerance mm Del. quantity	: +- 0.10	GUIDE SLEEVE POSITION	
cm3/1000 strokes	: 13.0	T 6010E 3E2EVE 1031110W	
Tolerance		+	
cm3/1000 strokes	: <del></del>	+ control lever	
Check tolerance		+ position degree : 109	
	: + 6.0	Rated speed rpm : 600	
Spreed Tolerance		Rack travel in mm : 20.00	
	: 6.C	+ Tolerance mm : +- 0.80	
Check tolerance		+	
cm3/10000.	: 10.0	+	
		FULL LOAD DELIVERY AT FULL LOAD STO	P
(B) SETTURG OF INJE	ECTTON DIME	Rated speed rpm : 550	
WITH GOVERNOR	ECTION FORF	+ Aneroid pressure	
WZIII GOVENNON		+ hPa : 1200	
<b></b>		+ Del. quantity	
GUIDE SLEEVE TRAVEL	-	- cm3/1000 strokes : 226.0	
Batad speed non-	: 1005	+ Tolerance + cm3/1000 strokes : + 1.0	
Rated speed rpm : guide sleeve	. 1003	Check tolerance	
travel mm	: 6.69	+ cm3/1000s. : +- 4.0	
Tolerance mm	: +- 0.10	Spreed	
	700	+ Tolerance	
Rated speed rpm :	: 300	+ cm3/1000 strokes : 6.0	
guide sleeve travel mm	: 1.63	+ Check tolerance + cm3/1000s. : 9.0	•
	: +- 0.10	T 00003 7.0	
COCOLORIO INII		+	
	: 950		
guide sleeve	. 75	+ CONTROL LEVER	
	6.35	†	
Tolerance mm :	, <del></del> u.iu	Τ	

		†
control lever position degree tolerance degree		ANEROID/ALTITUDE COMPENSATOR TEST
RATED SPEED rack travel mm Rated speed rpm		SETTING
Tolerance 1/min		Rated speed rpm : 400 Pressure hPa : 1200
rack travel mm Rated speed rpm Tolerance 1/min	: 1080	rack travel mm : 14.40 Tolerance mm : + 0.05
rack travel mm Tolerance mm Rated speed rpm		Rated speed rpm : 400 Pressure hPa : - rack travel mm : 10.60 Tolerance mm : + 0.20
		MEASUREMENT
LOW IDLE		Rated speed rpm : 400
control lever position degree	· 72 ()	Pressure hPa : 450 rack travel mm : 12.90 Tolerance mm : +- 0.10
tolerance degree		Pressure hPa : 300 rack travel mm : 11.90
Setting point w/o	out bumper spring	Tolerance mm : + 0.15
Rated speed rpm	: 200	Start interlock
CRT mm min.	: > 7.00	Rated speed rpm : > 100
Testing:		Rated speed rpm : > 220
Rated speed rpm rack travel mm Tolerance mm	: 5.50	Check speed 1/min : > 80 Check
rack travel mm	: 2.00	+ speed 1/min : > 240
Rated speed rpm Tolerance 1/min		FUEL DELIVERY CHARACTERISTICS
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 550 : 14.40 : +- 0.05	Aneroid pressure hPa : 1200 Rated speed rpm : 950 Del. quantity
Rated speed rpm	: 950	cm3/1000 strokes : 216.0 Tolerance
rack travel mm Tolerance mm		+ cm3/1000 strokes : + 2.0 + Check tolerance
Rated speed rpm rack travel mm	: 870 : 14.30	- cm3/1000s. : +- 5.0 - Spreed - Tolerance
Tolerance mm	: ← 0.10	cm3/1000 strokes : 8.0 Check tolerance
		cm3/1000s. : 12.0

rack travel mm	: 14.30
Tolerance mm	: ← 0.10

Aneroid	pressure
	•

Microra pressare			
hPa	:		-
Rated speed rpm	:		400
Del. quantity			
cm3/1000 strokes	:		107.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+-	4.0
Spreed			
Tolerance			

cm3/1000 strokes : 8.0

12.0

# STARTING FUEL DELIVERY

Check tolerance

cm3/1000s.

Rated	speed	rpm	:	100
Del. c	zuanti1	y		

cm3/1000 strokes : 210.0

Tolerance

cm3/1000 strokes : +- 10.0

Check tolerance

cm3/1000s. :  $\leftarrow$  14.0

# LOW IDLE

Rated speed rpm : 300

5.50 Rack travel in mm : Tolerance mm : <del>+-</del> 0.10 Del. quantity cm3/1000 strokes : 13.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance : +- 6.0 cm3/1000s. Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 13.02.98 : ISO 4113

Combination No. : 0 402 746 633

Injection pump

Pump designation : PES6P120A720RS7366 EP type number : 0 412 726 933

Governor

Governer design. : RQ300/1050PA1344

Governer no. : 0 421 801 821

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE

Motor

: 8460.41R.7143

Power KW

: 214.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 2 417 413 076

Inlet press. bar :

Tolerance bar : +- 0.1

2.5

Overflow quantity

min. L/h : 160 Tolerance L/h : +- 20.0

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

208.5

Tolerance bar : + 1.5

L06

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter :

3.0

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar :

Tolerance bar : + 1.0

Prestroke mm

2.85

Tolerance mm

: +- 0.05

Check

tolerance mm

: +- 0.10

Rack travel in mm : 20.50

Tolerance mm :  $\leftarrow$  0.50

Firing order

: 1-5-3-6-2-

: 4

Phasing

: 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Start of delivery mark

Check

tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm :

1050

Rack travel in mm : 11.55

Tolerance mm : +- 0.05 +	Del. quantity
- User darke man	cm3/1000 strokes : 234.0
Del. quantity cm3/1000 strokes : 234.0	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000 strokes : 234.0	Check tolerance
Tolerance	cm3/1000s. : +- 4.0
cm3/1000 strokes : + 1.0	Spreed Tolerance
Check tolerance	cm3/1000 strokes : 5.0
cm3/1000s. : +- 4.0 +	Check tolerance cm3/1000s. : 9.0
Spreed	CIII3/ 10005. : 9.0
+	
Tolerance + cm3/1000 strokes : 5.0 +	RATED SPEED rack travel mm : 10.50
Chiby 1000 strokes . J.U	Rated speed rpm : 1103
Check tolerance	Tolerance 1/min : +- 8
cm3/1000s. : 9.0	Check speed 1/min : +- 13
	3peca 17 iii 11
700	rack travel mm : 4.00
Rated speed rpm : 300	Rated speed rpm : 1175 Tolerance 1/min : +- 15
Rack travel in mm : 6.30	Check
Tolerance mm : + 0.10	speed 1/min : +- 20
Del. quantity + cm3/1000 strokes : 23.0 +	rack travel mm : 0.50
Tolerance	Tolerance mm : +- 0.50
cm3/1000 strokes : + 3.0	Rated speed rpm : 1350
Check tolerance + 6.0 + 6.0	
Spreed	
Tolerance + cm3/1000 strokes : 8.0 +	LOW IDLE
Check tolerance	LOW IDLE
cm3/1000s. : 12.0	
†	control lever
(B) SETTING OF INJECTION PUMP	position degree : 71.0 tolerance degree : +- 4.0
WITH GOVERNOR	•
1	Setting point w/out bumper spring
	Rated speed rpm : 200
GUIDE SLEEVE POSITION +	CRT mm min. : > 7.80
<u> </u>	CRI IIMI IN ITT. : > 7.80
control lever	Testing:
position degree : 109 + Rated speed rpm : 500 +	Rated speed rpm : 300
Rated speed (pii) . 300	rack travel mm : 6.30
Rack travel in mm: 20.00	Tolerance mm : + 0.10
Tolerance mm : + 0.80 +	rack travel mm : 2.00
	Rated speed rpm : 395
FULL LOAD DELIVERY AT FULL LOAD STOP	Tolerance 1/min : +- 20
Rated speed rpm : 1050	
Aneroid pressure	TORQUE CONTROL
hPa : 1200 +	Rated speed rpm : 1050 rack travel mm : 11.55
†	ומנא נוימעפנ ווחוו . וו.טס

Tolerance mm Rated speed rpm	: ← 0.05 · 425	+ Check + speed 1/min : < 260
rack travel mm Tolerance mm	: 12.75	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.75 : +- 0.10	Aneroid pressure hPa : 1200 Rated speed rpm : 500
Rated speed rpm rack travel mm Tolerance mm	: 700 : 12.50 : + 0.15	rack travel mm : 12.75 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 245.0
Rated speed rpm rack travel mm Tolerance mm	: 875 : 11.90 : + 0.15	Tolerance - cm3/1000 strokes : +- 4.0 - Check tolerance - cm3/1000s. : +- 7.0
Rated speed rpm rack travel mm Tolerance mm	: 425 : 13.30 : + 0.40	Aneroid pressure
ANEROID/ALTITUDE COMPENSATOR TEST		Rated speed rpm : 600  Del. quantity  cm3/1000 strokes : 152.0  Tolerance  cm3/1000 strokes : +- 1.0
SETTING		Check tolerance cm3/1000s. : +- 4.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : 12.75	STARTING FUEL DELIVERY
Rated speed rpm Pressure hPa		Rated speed rpm : 100 + rack travel mm : 11.60
Tolerance mm MEASUREMENT		Tolerance mm : + 0.30  Del. quantity  cm3/1000 strokes : 105.0  Tolerance  cm3/1000 strokes : + 15.0
Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm	: ← 0.20 : 600 : 260 : 10.40	Del. quantity cm3/1000 strokes : 105.0 Tolerance
Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa	: ← 0.20 : 600 : 260	Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000S. : +- 19.0  LOW IDLE  Rated speed rpm : 300
Tolerance mm  MEASUREMENT  Rated speed rpm  Pressure hPa rack travel mm  Tolerance mm  Pressure hPa rack travel mm	: ← 0.20  : 600  : 260 : 10.40 : ← 0.20  : 420 : 12.00 : + 0.05	Del. quantity cm3/1000 strokes : 105.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000S. : +- 19.0  LOW IDLE

Tolerance

cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. : 12.0

## Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 22.04.98 Test oil : ISO 4113

Combination No. : 0 402 646 739

Injection pump

Pump designation : PE6P120A320LS7904-1

EP type number : 0 412 626 964

Governor

Governer design. : RQ750PA1326 Governer no. : 0 421 801 815

Cust. part No. : 04222 3926 KY

Customer-spec. information

Customer : KHD

Motor : BF6M1D15/C

Power KW : 239.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 033

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 200 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.65
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-200

: -300\_

Tolerance : +- 0.50

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Start of delivery blocking

°NW after s.o.d. : 300.00Tolerance :  $\leftarrow 0.50$ 

Check

tolerance  $^{\circ}NW$  :  $\leftarrow$  0.75

Barrel no. : 6

BASIC SETTING

Rated speed rpm	: 700	+ Rated speed rpm : 271 + guide sleeve
		+ travel mm : 1.00
Rack travel in mo	n: 12.40	+ Tolerance mm : + 0.10
Tolerance mm	: +- 0.05	+
Del. quantity		+ Rated speed rpm : 560 + guide sleeve
cm3/1000 strokes	: 365.0	+ travel mm : 3.24
		+ Tolerance mm : + 0.10
Tolerance cm3/1000 strokes	: + 1.0	Rated speed rpm : 1154
		+ guide sleeve
Check tolerance		+ travel mm : 12.00
cm3/1000s.	: +- 4.0	+ Tolerance mm : + 0.10
		<del> </del>
Spreed		Rated speed rpm : 1230 guide sleeve
Tolerance		+ travel mm : 13.50
	. 50	
cm3/1000 strokes	: 5.0	Tolerance mm : +- 0.50
		t
Check tolerance cm3/1000S.	: 9.0	FULL LOAD DELIVERY AT FULL LOAD STOP
	<del></del>	<b>T</b>
		+ Rated speed rpm : 700
		+ Aneroid pressure
Rated speed rpm	: 300	+ hPa : -
Del. quantity		+ Del. quantity
cm3/1000 strokes	: 20.0	+ cm3/1000 strokes : 365.0
	. 20.0	+ Tolerance
Tolerance	. 3.6	
cm3/1000 strokes	: <del>+-</del> 3.0	+ cm3/1000 strokes : +- 1.0
Check tolerance		+ Check tolerance
cm3/1000s.	: +- 6.0	+ cm3/1000s. : $+$ 4.0
Spreed		Spreed
Tolerance		+ Tolerance
cm3/1000 strokes	: 8.0	+ cm3/1000 strokes : 5.0
	. 0.0	
Check tolerance	40.5	+ Check tolerance
cm3/1000S.	: 12.0	+ cm3/1000s. : 9.0
		+
		+
(B) SETTING OF IN	LIFCTION PUMP	
WITH GOVERNOR	0 0 1 2 0 1 7 1 0 1 1	- CONTROL LEVER
WITH GOVERNOR		CONTINUE FEACT
		T
		+ control lever
GUIDE SLEEVE TRAV	EL	+ position degree : 109.0
		+ tolerance degree : +- 4.0
Rated speed rpm	: 745	+
guide sleeve		+ RATED SPEED
travel mm	: 4.54	1
Tolerance mm		rack travel mm : 0.50
locerance nan	. +- 0.15	
	700	
Rated speed rpm	: 300	+ Rated speed rpm : 900
guide sleeve		+
travel mm	: 1.24	ASSEMBLY GOVERNOR SETTING
Tolerance mm		1
TO COT GITTO THE		Rated speed rpm : 750
Datad sessel	. 940	T nateu speeu (piii . /JU
Rated speed rpm	: 860	+ rack travel mm : 11.40
guide sleeve		†
travel mm	: 5.59	+ Rated speed rpm : 780
Tolerance mm		+ Tolerance 1/min : +- 4
. 5 . 5 . 4 . 7 . 7 . 7 . 7 . 7 . 7		,

rack travel mm rack travel mm Tolerance mm	: 4.50 : 0.50 : +- 0.50 : 900	rack travel mm : 0.50 Tolerance mm : +- 0.50
Rated speed rpm Rated speed rpm rack travel mm	: 751	TORQUE CONTROL Rated speed rpm : 700 rack travel mm : 12.40 Tolerance mm : + 0.05
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	Start interlock
rack travel mm Tolerance mm	: 0.50 : +- 0.50	Rated speed rpm : > 100 Rated speed rpm : < 560
Rated speed rpm rack travel mm	: 11.40 : 782	Check speed 1/min : > 80 Check speed 1/min : < 580
Tolerance 1/min rack travel mm	: +- 4 : 4.50	<del></del>
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 900	STARTING FUEL DELIVERY  Rated speed rpm : 100  rack travel mm : 20.25  Tolerance mm : +- 0.75
Rated speed rpm rack travel mm	: 753 : 11.40	Del. quantity cm3/1000 strokes : 210.0 Tolerance
Rated speed rpm Tolerance 1/min rack travel mm	: 783 : + 4 : 4.50	cm3/1000 strokes : + 20.0 Check tolerance cm3/1000S. : + 24.0
rack travel mm Tolerance mm	: 0.50 : ← 0.50	
Rated speed rpm		LOW IDLE
rack travel mm	: 11.40 : 784	Rated speed rpm : 300 Del. quantity cm3/1000 strokes : 20.0
Rated speed rpm Tolerance 1/min rack travel mm		Tolerance + cm3/1000 strokes : + 3.0
rack travel mm Tolerance mm Rated speed rpm	: 0.50 : +- 0.50 : 900	+ Check tolerance + cm3/1000s. : + 6.0 + Spreed + Tolerance
		cm3/1000 strokes : 8.0 Check tolerance
Rated speed rpm rack travel mm	: 755 : 11.40	+ cm3/1000s. : 12.0
Rated speed rpm Tolerance 1/min rack travel mm	: +- 4	End of test specification sheet

### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 21.04.98 Test oil : ISO 4113

Combination No. : 0 402 744 804

Injection pump

Pump designation : PES4P120A320RS7402 EP type number : 0 412 724 804

Governor

Governer design. : RQV275...1200PA1257K

Governer no. : 0 421 815 494

Cust. part No. : CCEP 5154A 66-238

Customer-spec. information

Customer : RENAULT V.I.
Motor : MIDR 04-02-26 A4

Power KW : 100.0

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp.  $^{\circ}$ C :  $^{\circ}$ C :  $^{\circ}$ C  $^{\circ}$ C :

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 125 Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

bar : 208.5 Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x Length mm : 600

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.10
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.00 Tolerance mm : + 0.50

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

°NW after s.o.d. : -0.30Tolerance :  $\leftarrow 0.50$ 

Check

tolerance °NW : + 0.75

Barrel no. : 1

Beginning of delivery differende

betw. rack trav.

nm : 21.00

and maximum rack

travel : 13.00

Difference ° CS : 2.40

CRT ZERO POSITION	+ travel mm : 1.52
	travel mm : 1.52 Tolerance mm : + 0.20
Rack travel in mm : 13.40 Tolerance mm : +- 0.05	Rated speed rpm : 888 guide sleeve
	travel mm : 6.57 Tolerance mm : + 0.25
BASIC SETTING	Rated speed rpm : 560
Rated speed rpm : 1200	guide sleeve travel mm : 4.01
Del. quantity cm3/1000 strokes : 261.0	Tolerance mm : + 0.25 Rated speed rpm : 1650
Tolerance cm3/1000 strokes : + 1.0	guide sleeve travel mm : 13.50 Tolerance mm : + 0.50
Check tolerance cm3/1000s. : + 4.0	+ Toterance mm : + U.5U
Spreed	+ GUIDE SLEEVE POSITION
Tolerance	+ control lever
cm3/1000 strokes : 5.0	position degree : - 1 Rated speed rpm : 1473
Check tolerance cm3/1000s. : 9.0	+ Rack travel in mm : 12.40 + Tolerance mm : +- 1.30
Rated speed rpm : 325	FULL LOAD DELIVERY AT FULL LOAD STOP
Rack travel in mm : -8.90	Rated speed rpm : 1200
Tolerance mm : + 0.10 Del. quantity	+ Aneroid pressure + hPa : 1200
cm3/1000 strokes : 33.0 Tolerance	+ Del. quantity + cm3/1000 strokes : 261.0
cm3/1000 strokes : + 2.0	† Tolerance
Check tolerance cm3/1000s. : +- 6.0	<pre>+ cm3/1000 strokes : +- 1.0 + Check tolerance</pre>
Spreed Tolerance	+ cm3/1000s. : +- 4.0 + Spreed
cm3/1000 strokes : 8.0 Check tolerance	Tolerance - cm3/1000 strokes : 5.0
cm3/1000s. : 12.0	- Check tolerance - cm3/1000s. : 9.0
(B) SETTING OF INJECTION PUMP	1
WITH GOVERNOR	CONTROL LEVER
CUTTE SI FELLE TRAVEL	+
GUIDE SLEEVE TRAVEL  Rated speed row : 1257	control lever position degree : 296.0
Rated speed rpm : 1257 guide sleeve travel mm : 9.18	tolerance degree : +- 4.0
travel mm : 9.18	+ RATED SPEED

Tolerance 1/min : + 5  rack travel mm : -9.40 Rated speed rpm : 1405 Tolerance 1/min : + 15  rack travel mm : -12.90 Tolerance mm : + 0.50 Rated speed rpm : 1500	Rated speed rpm : 1200 Pressure hPa : - rack travel mm : -3.20 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 1200  Pressure hPa : 200 rack travel mm : -2.40 Tolerance mm : + 0.20
LOW IDLE	Pressure hPa : 440 rack travel mm : -1.10 Tolerance mm : + 0.05
control lever position degree : 250.0 tolerance degree : +- 4.0	Start interlock
Setting point w/out bumper spring	Rated speed rpm : > 130 Rated speed rpm : < 275
Rated speed rpm : 225	+ Check
CRT mm min. : > −7.40	speed 1/min : > 110
Testing:	speed 1/min : < 285
Rated speed rpm : 325 rack travel mm : -8.90 Tolerance mm : +- 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 390	Aneroid pressure hPa : 1200 Rated speed rpm : 850
TORQUE CONTROL Rated speed rpm : 1200 Rated speed rpm : 850	- Rated speed rpm : 850 - Del. quantity - cm3/1000 strokes : 249.0 - Tolerance - cm3/1000 strokes : +- 3.0
rack travel mm : -1.00 Tolerance mm : +- 0.10	Check tolerance cm3/1000s. : +- 6.0
Rated speed rpm : 700 rack travel mm : -6.00 Tolerance mm : +- 0.20	Aneroid pressure hPa : - Rated speed rpm : 700
Rated speed rpm : 700 rack travel mm : -1.80 Tolerance mm : +- 0.20	rack travel mm : -6.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 153.0 Tolerance
ANEROID/ALTITUDE COMPENSATOR TEST	cm3/1000 strokes : + 8.0 Check tolerance cm3/1000s. : + 8.0
SETTING	Anneid pressure
Rated speed rpm : 1200	+ Aneroid pressure + hPa : -
Pressure hPa : 1200	Rated speed rpm : 1200

Del. quantity

cm3/1000 strokes : 183.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 100.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -8.90Tolerance mm : +-0.10

Del. quantity

cm3/1000 strokes : 33.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 16.04.98 Test oil : ISO 4113

Combination No. : 0 402 744 808

Injection pump

Pump designation : PES4P120A320RS7402 EP type number : 0 412 724 804

Governor

Governer design. : RQV275...1200PA1257

: -1K

Governer no. : 0 421 815 553

Cust. part No. : CCEP5166 66-238

Customer-spec. information

Customer : RENAULT V.I.

: MIDR 04-02-26 A4 Motor

Power KW : 100.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Overflow quantity

min. l/h : 125
Tolerance l/h : + 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0

x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.10
Tolerance mm : + 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 13.00 Tolerance mm :  $\leftarrow$  0.50

Firing order : 1- 3- 4- 2

: 0-90-180-270 Phasing Tolerance

: +- 0.50

Check

tolerance °NW : +- 0.75

## Start of delivery mark

°N₩ after s.o.d. : -10.30

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

# Beginning of delivery difference

betw. rack trav.

21.00

and maximum rack

13.00 travel Difference ° CS : 2.40

CRT ZERO POSITION		
Rack travel in mm Tolerance mm	: 13.40 : ← 0.05	
BASIC SETTING		
Rated speed rpm	: 1200	
Del. quantity cm3/1000 strokes	: 261.0	
Tolerance cm3/1000 strokes	: + 1.0	
Check tolerance cm3/1000s.	: + 4.0	
Spr <del>ee</del> d		
Tolerance cm3/1000 strokes	: 5.0	
Check tolerance cm3/1000s.	: 9.0	
Rated speed rpm	: 325	
Rack travel in mm Tolerance mm Del. quantity	: <del></del> 0.10	
cm3/1000 strokes Tolerance		
cm3/1000 strokes Check tolerance		
cm3/1000s. Spreed	: +- 6.0	
Tolerance cm3/1000 strokes Check tolerance	: 8.0	
cm3/1000s.	: 12.0	
(B) SETTING OF INJ WITH GOVERNOR	JECTION PUMP	
GUIDE SLEEVE TRAVE	EL .	
Rated speed rpm guide sleeve	: 1257	

Rated speed rpm guide sleeve	: 325
travel mm Tolerance mm	: 1.52 : ← 0.20
Rated speed rpm guide sleeve	: 888
travel mm Tolerance mm	: 6.57 : +- 0.25
Rated speed rpm guide sleeve	: 560
travel mm Tolerance mm	: 4.01 : ← 0.25
Rated speed rpm guide sleeve	: 1650
travel mm Tolerance mm	: 13.50 : +- 0.50
GUIDE SLEEVE POSI	TION
control lever position degree Rated speed rpm	: - 1 : 1473
Rack travel in mm Tolerance mm	: 12.40 : + 1.30
FULL LOAD DELIVER	Y AT FULL LOAD STOP
Rated speed rpm Aneroid pressure	: 1200
hPa Del. quantity	: 1200
cm3/1000 strokes Tolerance	: 261.0
cm3/1000 strokes	: +- 1.0

# Check tolerance cm3/1000s. : +- 4.0 Spreed Tolerance cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0

# CONTROL LEVER

control lever position degree : 296.0 tolerance degree : + 4.0

RATED SPEED rack travel mm : -1.00 Rated speed rpm : 1245

Tolerance 1/min : + 5  rack travel mm : -9.40 Rated speed rpm : 1405 Tolerance 1/min : + 15  rack travel mm : -12.90 Tolerance mm : + 0.50 Rated speed rpm : 1500	Rated speed rpm : 1200 Pressure hPa : - rack travel mm : -3.20 Tolerance mm : + 0.20  MEASUREMENT  Rated speed rpm : 1200  Pressure hPa : 200
LOW IDLE	rack travel mm : -2.40 Tolerance mm : + 0.20  Pressure hPa : 440 rack travel mm : -1.10 Tolerance mm : + 0.05
control lever position degree : 251.0 tolerance degree : +- 4.0	Start interlock
Setting point w/out bumper spring	Rated speed rpm : > 130 Rated speed rpm : < 275
Rated speed rpm : 225  CRT mm min. : > -7.40	Check :> 110
Testing:	+ Check + speed 1/min : < 285
Rated speed rpm : 325 rack travel mm : -8.90 Tolerance mm : + 0.10	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 390	Aneroid pressure hPa : 1200
TORQUE CONTROL Rated speed rpm : 1200	Rated speed rpm : 850 Del. quantity cm3/1000 strokes : 249.0 Tolerance
Rated speed rpm : 850 rack travel mm : -1.00 Tolerance mm : +- 0.10	- cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000s. : +- 6.0
Rated speed rpm : 700 rack travel mm : -6.00 Tolerance mm : + 0.20	Aneroid pressure
Rated speed rpm : 700 rack travel mm : -1.80 Tolerance mm : + 0.20	Rated speed rpm : 700 rack travel mm : -6.00 Tolerance mm : + 0.20 Del. quantity cm3/1000 strokes : 153.0 Check tolerance
ANEROID/ALTITUDE COMPENSATOR TEST	cm3/1000s. : +- 8.0
SETTING  Rated speed rpm : 1200  Pressure hPa : 1200	Aneroid pressure  hPa : - Rated speed rpm : 1200  Del. quantity cm3/1000 strokes : 183.0
Company of the second of the s	1

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 100.0

Tolerance

cm3/1000 strokes : +- 15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 325

Rack travel in mm : -8.90

Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 33.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

cm3/1000s. :  $\leftarrow$  6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.04.98 Test oil : ISO 4113

Combination No. : 0 402 776 803

Injection pump

Pump designation : PES6P120A720LS7107

: -1

EP type number : 0 412 726 805

Governor

Governer design. : RSV350...750P0A520

: -1

Governer no. : 0 421 833 262

Cust. part No. :

Customer—spec. information Customer : MB-NFZ Motor : 0M447 A Power KW : 180.0

## TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp.  $^{\circ}$ C : 40 Tolerance  $^{\circ}$ C : + 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. l/h : 110 Tolerance l/h :  $\leftarrow$  10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5

Tolerance bar : + 1.5

Test Lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 1.5

x Length mm : 1000

## REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

## BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05
Check

tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm : + 0.50

Firing order : 6-2-4-1-5-

: 3

Phasing : 0-60-120-180-240

: -300

Tolerance : + 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Barrel no. : 6

# BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85 Tolerance mm : + 0.05

oterance mm : + U.U5

Del. quantity + cm3/1000 strokes : 225.0 +	Aneroid pressure hPa : - Del. quantity
Tolerance cm3/1000 strokes : + 1.0	cm3/1000 strokes : 225.0 Tolerance
Check tolerance	<pre>cm3/1000 strokes : +- 1.0 Check tolerance cm3/1000s. : +- 4.0</pre>
Spreed	Spreed Tolerance
Tolerance + cm3/1000 strokes : 5.0 +	cm3/1000 strokes : 5.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000S. : 9.0	
	CONTROL LEVER
Rated speed rpm : 350	<pre>control lever position degree : 77.0 tolerance degree : +- 4.0</pre>
Rack travel in mm : 5.60 + Tolerance mm : + 0.10 +	-
Del. quantity cm3/1000 strokes : 17.0	ASSEMBLY GOVERNOR SETTING
Tolerance + 3.0 + Check tolerance + + + + + + + + + + + + + + + + + + +	Rated speed rpm : 750 rack travel mm : 13.80
cm3/1000s. : + 6.0 + 5preed	Rated speed rpm : 785 Tolerance 1/min : +- 4
Tolerance cm3/1000 strokes : 8.0 + Check tolerance + Check toleran	rack travel mm : 4.00
cm3/1000s. : 12.0	Tolerance mm : +- 0.55 Rated speed rpm : 850
(B) SETTING OF INJECTION PUMP	Rated speed rpm : 751
WITH GOVERNOR	Rated speed rpm : 751 rack travel mm : 13.80
GUIDE SLEEVE POSITION	Rated speed rpm : 786 Tolerance 1/min : +- 4
	rack travel mm : 4.00
control lever position degree : - 3	rack travel mm : 0.85 Tolerance mm : +- 0.55
Rated speed rpm : 800	Rated speed rpm : 850
Rack travel in mm: 0.65 Tolerance mm: + 0.35	Rated speed rpm : 752 rack travel mm : 13.80
governor spring + + + + + + + + + + + + + + + + + + +	Rated speed rpm : 787
click setting x : 2.75	Tolerance 1/min : +- 4 rack travel mm : 4.00
FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 0.85
Rated speed rpm : 700	Tolerance mm : +- 0.55 Rated speed rpm : 850

Rated speed rpm	: 753
rack travel mm	: 13.80
Rated speed rpm	: 788
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 754
rack travel mm	: 13.80
Rated speed rpm	: 789
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 13.80
Rated speed rpm	: 790
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: ← 0.55
Rated speed rpm	: 850
LOW IDLE	
control lever position degree tolerance degree	: 62.0 : + 4.0
Testing:	
Rated speed rpm	: 350
rack travel mm	: 5.60
Tolerance mm	: + 0.10
rack travel mm	: 2.00
Rated speed rpm	: 380
Tolerance 1/min	: + 30

TORQUE CONTROL Rated speed rpm : 700 rack travel mm :
Tolerance mm : +-14.85 : +- 0.05 STARTING FUEL DELIVERY Rated speed rpm : 100 rack travel mm : 19.50 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 240.0 Tolerance cm3/1000 strokes : +- 10.0 Check tolerance cm3/1000s. : + 14.0 LOW IDLE Rated speed rpm : 350 5.60 Rack travel in mm : Tolerance mm : ← 0.10 Del. quantity cm3/1000 strokes : 17.0 Tolerance cm3/1000 strokes :  $\leftarrow$  3.0 Check tolerance cm3/1000s. : **←** 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

End of test specification sheet

SET IDLE AUXILIARY SPRING

Rated speed rpm : 100 rack travel mm :

2.00

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition

: 28.04.98 Test oil : ISO 4113

Combination No. : 0 402 066 710

Injection pump

Pump designation : PES6P110A120RS3357 EP type number : 0 412 016 754

Governor

Governer design. : RSV400...900P4A633 Governer no. : 0 421 833 541

Cust. part No. : 3934780

Customer-spec. information

Customer : CDC

Motor Power KW : 6CTA ELITE

: 207.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 086

Inlet press. bar : Tolerance bar : + 0.1

Test nozzle holde

: 1 688 901 103 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0 x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : +- 1.0

Prestroke mm : 3.60 : +- 0.05 Tolerance mm Check

tolerance mm : ← 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.30

Check

tolerance °NW : ← 0.75

Start of delivery blocking

°NW after s.o.d. : 7.25 : +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

#### BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.35 Tolerance mm :  $\leftarrow$  0.05

4	Aneroid pressure
Del. quantity cm3/1000 strokes : 213.0	hPa : - Del. quantity
Tolerance	cm3/1000 strokes : 213.0 Tolerance
cm3/1000 strokes : +- 1.0	cm3/1000 strokes : +- 1.0 Check tolerance
Check tolerance cm3/1000s. : + 3.0	cm3/1000s. : +- 3.0 Spreed Tolerance
Spreed	cm3/1000 strokes : 4.0 Check tolerance
Tolerance cm3/1000 strokes : 4.0	cm3/1000s. : 7.5
Check tolerance cm3/1000s. : 7.5	CONTROL LEVER
	control lever
+	position degree : 102.0
Rated speed rpm : 400	tolerance degree : +- 4.0
Rack travel in mm: 6.20	RATED SPEED
Tolerance mm : + 0.20 +	rack travel mm : 12.30
Del. quantity +	Rated speed rpm : 960
cm3/1000 strokes : 24.0 +	Tolerance 1/min : +- 5
Tolerance cm3/1000 strokes : +- 2.0	Check speed 1/min : +- 10
Check tolerance	
cm3/1000s. : + 4.5	rack travel mm : 6.40
Spreed	Rated speed rpm : 990
Tolerance + cm3/1000 strokes : 6.0 +	Tolerance 1/min : +- 5 Check
Check tolerance	speed 1/min : +- 10
cm3/1000s. : 9.0	3peca 17111111 : 10
	rack travel mm : 0.85
1	Tolerance mm : + 0.55
(B) SETTING OF INJECTION PUMP +	Rated speed rpm : 1100
+	rack travel mm : 6.40
+	Rated speed rpm : 990
	Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION +	Check
‡	speed 1/min : +- 20
control lever	
position degree : - 3	
Rated speed rpm : 800	LOW IDLE
Rack travel in mm: 0.50	COM IDEC
Tolerance mm : + 0.20	
+	control lever
governor spring	position degree : 77.0
pre-tension +	tolerance degree : +- 4.0
click setting $x$ : 4.00	
+	Control lever difference
	Grad : 25.0
FULL LOAD DELIVERY AT FULL LOAD STOP	tolerance degree : +- 6.0
Rated speed rpm : 900	Setting point w/out bumper spring

Rated speed rpm : 400 rack travel mm : 5.70 Tolerance mm : +- 0.10

Rated speed rpm : 100

CRT mm min. : < 19.00

Testing:

Rated speed rpm : 400 rack travel mm : 6.20 Tolerance mm : +- 0.20

TORQUE CONTROL

Rated speed rpm : 900 rack travel mm : 13.35 Tolerance mm : + 0.05

STARTING FUEL DELIVERY

rack travel mm : 21.00
Tolerance mm Del. quantity

cm3/1000 strokes : 165.0

Tolerance

cm3/1000 strokes : +- 20.0

Check tolerance

: +- 25.0 cm3/1000s.

LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 6.20 Tolerance mm : + 0.20

Del. quantity

cm3/1000 strokes : 24.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  2.0

Check tolerance

: +- 4.5 cm3/1000s.

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

9.0 cm3/1000s.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 28.04.98 Test oil : ISO 4113

Combination No. : F 002 A0Z 079

Injection pump

Pump designation : PES4A95D320/3RS2952

EP type number : F 002 A10 030

Governor

Governer design. : RQV475...1250AB1329R

Governer no. : F 002 A30 004

Cust. part No. : 3933691

Customer-spec. information Customer : CDC Motor : 4BNA Power KW : 59.6

## TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208 5

Tolerance bar : + 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

x inside diameter: 2.0

x length mm : 600

Set equal delivery quant.

per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm: 10.50

Tolerance mm : +- 1.50

Firing crder : 1-3-4-2

Phasing : 0-90-180-270

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

\*NW after s.o.d. : 8.50 Tolerance : + 0.50

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.00 Tolerance mm : + 0.05

Del. quantity

cm3/1000 strokes : 87.0

Tolerance cm3/1000 strokes : +- 1.0	guide sleeve travel mm : 11.50 Tolerance mm : +- 0.50
Check tolerance cm3/1000s. : + 3.0	FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	
Tolerance cm3/1000 strokes : 3.5	Rated speed rpm : 1250 Aneroid pressure hPa : - Del. quantity
Check tolerance cm3/1000s. : 6.0	cm3/1000 strokes : 87.0 Tolerance cm3/1000 strokes : +- 1.0
Rated speed rpm : 475	Check tolerance cm3/1000s. : + 3.0 Spreed
Rack travel in mm : 5.35 Tolerance mm : + 0.10	Tolerance cm3/1000 strokes : 3.5 Check tolerance
Del. quantity cm3/1000 strokes : 15.0 Tolerance	cm3/1000s. : 6.0
cm3/1000 strokes : + 2.0 + Check tolerance cm3/1000s. : + 4.5	CONTROL LEVER
Spreed - Tolerance - cm3/1000 strokes : 3.5	control lever position degree : 100.0 tolerance degree : +- 6.0
Check tolerance cm3/1000s. : 5.5	RATED SPEED
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 9.00 Rated speed rpm : 1300 Tolerance 1/min : +- 15
	rack travel mm : 4.00 Rated speed rpm : 1390
GUIDE SLEEVE TRAVEL	Tolerance 1/min : +- 5
Rated speed rpm : 1310 guide sleeve travel mm : 8.60 Tolerance mm : + 0.15	rack travel mm : 0.50 Tolerance mm : +- 0.50 Rated speed rpm : 1475
Rated speed rpm : 475 + guide sleeve +	
travel mm : 1.90 Tolerance mm : + 0.20	LOW IDLE
Rated speed rpm : 930 + guide sleeve + travel mm : 5.25 +	control lever position degree : 70,0 tolerance degree : +- 6.0
Tolerance mm : +- 0.25	Control lever difference
Rated speed rpm : 630 + guide sleeve + travel mm : 3.30 +	Grad : 30.0 tolerance degree : +- 6.0
Tolerance mm : +- 0.25	Setting point w/out bumper spring
Rated speed rpm : 1630	Rated speed rpm : 400

CRT mm min. : > 7.00Testing: : 475 Rated speed rpm rack travel mm : 5.35 : +- 0.10 Tolerance mm Rated speed rpm : 550 TORQUE CONTROL 1250 Rated speed rpm : rack travel mm : 10.00 : +- 0.05 Tolerance mm Start interlock 100 Rated speed rpm : > Rated speed rpm : < 385 Check speed 1/min : > 80 Check speed 1/min : < 395 STARTING FUEL DELIVERY Rated speed rpm : 100 20.50 rack travel mm : Tolerance mm : +- 0.50 Del. quantity cm3/1000 strokes : 120.0 Tolerance cm3/1000 strokes :  $\leftarrow$  10.0 Check tolerance : +- 15.0 cm3/1000s. LOW IDLE Rated speed rpm : 475 Rack travel in mm: 5.35 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 15.0

Tolerance cm3/1000 strokes : 3.5 Check tolerance 5.5 cm3/1000s.

End of test specification sheet

MO2

Tolerance

cm3/1000s.Spreed

Check tolerance

cm3/1000 strokes : +- 2.0

: +- 4.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 06.05.98 : ISO 4113

Combination No. : 0 402 086 704

Injection pump

Pump designation : PES6P100B321RS3388

EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A693

Governer no. : 0 421 833 616

Cust. part No. : 51.11103-7607

Customer-spec. information

Customer

: MAN

Motor

: D0826 LE531

Power KW

: 191.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C

40

Tolerance °C

: **←** 2.0

Overflow valve

: 1 417 413 047

Inlet press. bar :

2.0

Tolerance bar

: <del>+-</del> 0.1

Overflow quantity

: 150

Tolerance l/h: +- 20.0

min. L/h

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

: 208.5

Tolerance bar : +- 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter :

2.0

x length mm : 600

# REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : Tolerance bar : +- 1.0

Prestroke mm : 3.30 : +- 0.05

Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm : 13.50

Tolerance mm : + 0.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

: +- 0.50 Tolerance

Check

tolerance "NW : + - 0.75

Start of delivery blocking

: +- 0.10 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm :

925

2 4 40	†
Rack travel in mm : 14.10 Tolerance mm : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
roterance man	TOLE LOND DELIVERY AT TOLE LOND STOP
Del. quantity	+ Rated speed rpm : 925
cm3/1000 strokes : 174.0	+ Aneroid pressure
	+ hPa : 1500
Tolerance	+ Del. quantity + cm3/1000 strokes : 174.0
cm $3/1000$ strokes : $+-$ 1.0	+ cm3/1000 strokes : 174.0 + Tolerance
Check tolerance	+ cm3/1000 strokes : + 1.0
cm3/1000s. : + 4.0	+ Check tolerance
110	+ cm3/1000s. : +- 4.0
Spreed	Spreed
	+ Tolerance
Tolerance	+ cm3/1000 strokes : 4.0
cm3/1000 strokes : 4.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : 6.0
cm3/1000s. : 6.0	I
Ch5/15655 0.0	
	+ CONTROL LEVER
	+
Rated speed rpm : 400	+ control lever
2 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	position degree : 104.0
Rack travel in mm : 4.90 Tolerance mm : +- 0.10	tolerance degree : +- 4.0
Tolerance mm : +- 0.10 Del. quantity	RATED SPEED
cm3/1000 strokes : 25.0	+ rack travel mm : 12.60
Tolerance	+ Rated speed rpm : 1175
cm3/1000 strokes : +- 3.0	+ Tolerance 1/min : + 5
Check tolerance	+
$cm3/1000s.$ : $\leftarrow$ 6.0	+ rack travel mm : 4.00
Spreed	+ Rated speed rpm : 1265
Tolerance	+ Tolerance 1/min : + 15
cm3/1000 strokes : 3.5	
Check tolerance cm3/1000s. : 5.5	+ rack travel mm : 0.85 + Tolerance mm : + 0.55
UIID7 (0003	+ Rated speed rpm : 1400
	Traced Speed 1 pin . 1400
(B) SETTING OF INJECTION PUMP	+ rack travel mm : 4.00
WITH GOVERNOR	+ Rated speed rpm : 1270
	+ Tolerance 1/min : ← 15
	†
GUIDE SLEEVE POSITION	İ
GOIDE SEEEVE POSITION	
	+ LOW IDLE
control lever	+
position degree : - 3	+
Rated speed rpm : 800	+ control lever
0.50	position degree : 80.0
Rack travel in mm : 0.50 Tolerance mm : +- 0.20	tolerance degree : + 4.0
TOTAL DELICATION . TO U.CU	+ Setting point w/out bumper spring
governor spring	+
pre-tension	Rated speed rpm : 400
click setting x : 5.00	+ rack travel mm : 4.40 + Tolerance mm : +- 0.10
	+ Tolerance mm : +- 0.10
	+

## Testing:

Rated speed rpm : 400 rack travel mm : 4.90 Tolerance mm : + 0.10 rack travel mm : 2.00

Rated speed rpm : 500
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 925 rack travel mm : 14.10 Tolerance mm : + 0.05

Rated speed rpm : 1125 rack travel mm : 13.60 Tolerance mm : + 0.05

Rated speed rpm : 700 rack travel mm : 14.15 Tolerance mm : + 0.10

Rated speed rpm : 1025 rack travel mm : 13.95 Tolerance mm : + 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

#### **SETTING**

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 14.10
Tolerance mm : + 0.15

Rated speed rpm : 500
Pressure hPa : rack travel mm : 9.45
Tolerance mm : + 0.15

## **MEASUREMENT**

Rated speed rpm : 500

Pressure hPa : 150 rack travel mm : 9.75 Tolerance mm : + 0.05

Pressure hPa : 800 rack travel mm : 13.05 Tolerance mm : + 0.15

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1500 Rated speed rpm : 1125

Del. quantity

cm3/1000 strokes : 161.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Aneroid pressure

hPa : 1500
Rated speed rpm : 700
rack travel mm : 14.15
Tolerance mm : + 0.10
Del. quantity
cm3/1000 strokes : 187.0

Tolerance cm3/1000 strokes : + 3.0

Check tolerance cm3/1000s. : +- 6.0

Aneroid pressure

hPa : -Rated speed rpm : 500 Del. quantity

cm3/1000 strokes : 91.0

cm3/1000 strokes : +- 1.0 Check tolerance

cm3/1000s.  $\div$  4.0

## STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.45
Tolerance mm : +- 0.45
Del. quantity
cm3/1000 strokes : 112.0
Tolerance
cm3/1000 strokes : +- 10.0

Check tolerance cm3/1000s. : + 14.0

# LOW IDLE

Rated speed rpm : 400

Rack travel in mm : 4.90 Tolerance mm : + 0.10

Del. quantity cm3/1000 strokes	:	25.0
Tolerance cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.	: +-	6.0
Spreed Tolerance		
cm3/1000 strokes Check tolerance	:	3.5
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.05.98 Edition Test oil : ISO 4113

Combination No. : 0 402 086 705

Injection pump

Pump designation : PES6P100B321RS3388 EP type number : 0 412 006 714

Governor

Governer design. : RSV400...1125P0A694

Governer no. : 0 421 833 617

Cust. part No. : 51.10100-7606

Customer-spec. information

Customer : MAN

Motor : DO826 LE527

: 169.0 Power KW

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

40 temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : +- 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 101

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 008

Outside diameter : 6.0

2.0 x inside diameter :

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 3.30 Tolerance mm : +- 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 13.50 Tolerance mm : +- 0.50

: 1-5-3-6-2-Firing order

: 0-60-120-180-240 Phasing

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery blocking

: +- 0.10 Tolerance

Check

tolerance °NW : + 0.75

Barrel no. : 1

BASIC SETTING

925 Rated speed rpm :

+	
Rack travel in mm : 13.90 + Tolerance mm : +- 0.05 +	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 166.0	Rated speed rpm : 925 Aneroid pressure
Tolerance + 1.0 +	hPa : 1500 Del. quantity cm3/1000 strokes : 166.0
Check tolerance	Tolerance cm3/1000 strokes : +- 1.0
cm3/1000s. : + 4.0	Check tolerance cm3/1000s. : +- 4.0
Spreed + Tolerance +	Spreed Tolerance cm3/1000 strokes : 4.0
cm3/1000 strokes : 4.0	Check tolerance cm3/1000s. : 6.0
Check tolerance cm3/1000S. : 6.0	
<del></del> ‡	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 104.4
Rack travel in mm : 4.80 + Tolerance mm : + 0.10 + Del. quantity +	tolerance degree : +- 4.0  RATED SPEED
cm3/1000 strokes : 25.0 + Tolerance +	rack travel mm : 12.10 Rated speed rpm : 1175
cm3/1000 strokes : + 3.0 + Check tolerance +	Tolerance 1/min : +- 5
cm3/1000S. : + 6.0 + 5	rack travel mm : 4.00 Rated speed rpm : 1260 Tolerance 1/min : +- 15
cm3/1000 strokes : 3.5 + Check tolerance	rack travel mm : 0.85
cm3/1000s. : 5.5	Tolerance mm : +- 0.55 Rated speed rpm : 1400
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1265 Tolerance 1/min : +- 15
CHIDE SLEEVE DOSTITION	
GUIDE SLEEVE POSITION	LOW IDLE
control lever position degree : - 3 Rated speed rpm : 800	control lever
Rack travel in mm: 0.50 +	position degree : 80.0 tolerance degree : + 4.0
Tolerance mm : + 0.20 + governor spring +	Setting point w/out bumper spring
pre-tension click setting x : 5.50	Rated speed rpm : 400 rack travel mm : 4.30 Tolerance mm : + 0.10
+	

# Testing:

Rated speed rpm rack travel mm Tolerance mm	:	+	400 4.80 0.10
rack travel mm Rated speed rpm Tolerance 1/min	:	+	2.00 500 30

TORQUE CONTROL		
Rated speed rpm	:	925
rack travel mm	:	13.90
Tolerance mm	: +	-0.05

Rated speed rpm	:	1125
rack travel mm	:	13.10
Tolerance mm	:	+ 0.10

Rated speed rpm	:	700
rack travel mm	:	14.00
Tolerance mm	: +	- 0.10

Rated speed rpm	:	1000
rack travel mm	:	13.70
Toterance mm	:	+ 0.10

# ANEROID/ALTITUDE COMPENSATOR TEST

# SETTING

Rated speed rpm	:	500
Pressure hPa	:	1500
rack travel mm	:	14.00
Tolerance mm	:	← 0.10

Rated speed rpm	:	500
Pressure hPa	:	_
rack travel mm	:	9.50
Tolerance mm	: +	- 0.20

# MEASUREMENT

Rated speed rpm : 50
----------------------

Pressure hPa	:		150
rack travel mm	:		10.00
Tolerance mm	: -	-	0.05

Pressure hPa	:	800
rack travel mm	:	13.20
Tolerance mm	: +	- 0.15

# FUEL DELIVERY CHARACTERISTICS

Aneroid pressure		
hPa	:	1500
Rated speed rpm	:	1125
Del. quantity		
cm3/1000 strokes	:	143.5
Tolerance		
cm3/1000 strokes	: +	<b>⊢</b> 3.0

cm3/1000 strokes	: +-	3.0
Check tolerance cm3/1000s.	: +-	6.0

Aneroid pressure			
hPa	:	1	500
Rated speed rpm	:		700
rack travel mm	:		14.00
Tolerance mm	:	+-	0.10
Del. quantity			
cm3/1000 strokes	:		177.5
Tolerance			
cm3/1000 strokes	:	+-	3.0
Check tolerance			
cm3/1000s.	:	+-	6.0

Aneroid pressure			
hPa	:		-
Rated speed rpm	:		500
Del. quantity			
cm3/1000 strokes	:		88.0
Tolerance			
cm3/1000 strokes	:	+-	1.0
Check tolerance			
cm3/1000s.	:	+	4.0

# STARTING FUEL DELIVERY

Rated speed rpm	:		100
rack travel mm	:		9.50
Tolerance mm	;	+-	0.20
Del. quantity			
cm3/1000 strokes	:		112.0
Tolerance			
cm3/1000 strokes	:	+-	10.0
Check tolerance			
cm3/1000s		+-	14 0

# LOW IDLE

Rated	speed	rpm	:	400

Rack travel in mm	:	4.80
Tolerance mm	: +-	0.10

Del. quantity		
cm3/1000 strokes	:	25.0
Tolerance		
cm3/1000 strokes	: +-	3.0
Check tolerance		
cm3/1000s.	: +-	6.0
Spreed		
Tolerance		
cm3/1000 strokes	:	3.5
Check tolerance		
cm3/1000s.	:	5.5

#### Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 04.05.98 Test oil : ISO 4113

Combination No. : 0 402 646 955

Injection pump

Pump designation : PE6P120A320LS7834-1

EP type number : 0 412 626 857

Governor

Governer design. : RQV350...1050PA866

: -13

Governer no. : 0 421 813 954

Cust. part No. :

Customer—spec. information
Customer : MB-NFZ
Motor : OM401 LA
Power KW : 230.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40 Tolerance °C :  $\leftarrow$  2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0

Overflow quantity

min. l/h : 110 Tolerance l/h :  $\leftarrow$  10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

bar : 208.5 Tolerance bar : +- 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 1000

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50 Tolerance mm : + 0.50

Firing order : 6-3-5-2-4-

: 1

Phasing : 0-60-120-180-240

: -300

Tolerance :  $\leftarrow$  0.50

Check

tolerance °NW : ← 0.75

Start of delivery mark

Tolerance :  $\leftarrow$  0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 6

# CRT ZERO POSITION

Rack travel in mm : 14.70 Tolerance mm : +- 0.10

	+ Tolerance mm : ← 0.10
BASIC SETTING	‡ guide sleeve
5/1020 52112110	+ travel mm : 4.10
Rated speed rpm : 600	Tolerance mm : + 0.20
Nated Speed (pin . ooo	
	f guide sleeve
Rack travel in mm : 14.70	† travel mm : 7.00
Tolerance mm : + 0.10	+ Tolerance mm : + 0.20
	+
Del. quantity	+
cm3/1000 strokes : 223.0	+ GUIDE SLEEVE POSITION
	†
Tolerance	†
cm $3/1000$ strokes : $\leftarrow$ 1.0	+ control lever
	position degree : - 1
Check tolerance	+ Rated speed rpm : 1130
cm $3/1000$ s. : $\leftarrow$ 4.0	Deal Arguel in the 17.25
Connect	+ Rack travel in mm : 17.25
Spreed	+ Tolerance mm : +- 1.30
Tolerance	I
cm3/1000 strokes : 5.0	+ FULL LOAD DELIVERY AT FULL LOAD STOP
CHIST TOOD STROKES . J.U	T FOLL LOAD DELIVER! AT FOLL LOAD STOP
Check tolerance	Rated speed rpm : 600
cm3/1000s. : 9.0	Aneroid pressure
Chis/ 10003 7.0	hPa : 900
<del></del>	Del. quantity
	cm3/1000 strokes : 223.0
Rated speed rpm : 350	+ Tolerance
Mateu Specu i piii : 330	+ cm3/1000 strokes : +- 1.0
Rack travel in mm: 5.40	- Check tolerance
Tolerance mm : + 0.10	+ cm3/1000s. : +- 4.0
Del. quantity	Spreed
cm3/1000 strokes : 19.0	Tolerance
Tolerance	- cm3/1000 strokes : 5.0
cm3/1000 strokes : +- 3.0	+ Check tolerance
Check tolerance	+ cm3/1000s. : 9.0
cm3/1000s. : +- 6.0	<del>}</del>
Spreed	+
Tolerance	+
cm3/1000 strokes : 6.0	+ CONTROL LEVER
Check tolerance	+
cm3/1000s. : $10.0$	+ control lever
	+ position degree : 121.0
	+ tolerance degree : +- 4.0
(B) SETTING OF INJECTION PUMP	†
WITH GOVERNOR	+ RATED SPEED
	rack travel mm : 13.90
CHARE CLEENE TRAVEL	+ Rated speed rpm : 1095 + Tolerance 1/min : +- 5
GUIDE SLEEVE TRAVEL	Toterance //min : += 3
Rated speed rpm : 1200	rack travel mm : 4.00
guide steeve	Rated speed rpm : 1175
travel mm : 8.75	+ Tolerance 1/min : +- 15
Tolerance mm : +- 0.25	1
TO COLUMN TO COLUMN TO THE COLUMN TO	rack travel mm : 0.50
Rated speed rpm : 350	+ Tolerance mm : + 0.50
guide sleeve	+ Rated speed rpm : 1300
travel mm : 1.50	+
	·

LOW IDLE	
control lever position degree tolerance degree	: 67.0 : +- 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 7.30
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 350 : 5.40 : ← 0.10
Rated speed rpm	: 475
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 600 : 14.70 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1050 : 14.90 : ← 0.10
Rated speed rpm rack travel mm Tolerance mm	
ANEROID/ALTITUDE COMPENSATOR TEST	
2-stage LDA setti	ng
Rated speed rpm Pressure hPa	: 600 : 900
MEASUREMENT	
Pressure hPa rack travel mm Tolerance mm	: 300 : −3.10 : ← 0.05
Pressure hPa rack travel mm Tolerance mm	: 600 : -1.10 : +- 0.10
Pressure hPa	: 1350
w4.7	

rack travel mm Tolerance mm	: 0.20 : +- 0.05
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 270
Check speed 1/min Check	: > 80
speed 1/min	: < 290
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure	4000
hPa Rated speed rpm Del. quantity	: 1800 : 1050
cm3/1000 strokes	: 235.5
Tolerance cm3/1000 strokes	: +- 1.5
Check tolerance cm3/1000s. Spreed	: +- 4.5
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000s.	: 12.0
Aneroid pressure hPa Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000 strokes Check tolerance cm3/1000s.	
Aneroid pressure hPa	: _ <del>_</del>
Rated speed rpm Del. quantity	: 500
cm3/1000 strokes Tolerance	
cm3/1000 strokes	: <del>+-</del> 1.0

Check tolerance
cm3/1000s. : +- 4.0
Spreed
Tolerance
cm3/1000 strokes : 8.0
Check tolerance
cm3/1000s. : 12.0

REDUCED QUANTITY

End of test specification sheet

Aneroid pressure 1800 hPa Rated speed rpm 1050 12.60 rack travel mm Tolerance mm : +- 0.20 Del. quantity cm3/1000 strokes : 177.0 Tolerance cm3/1000 strokes : + 2.0 Check tolerance cm3/1000s. 5.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0

# STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm3/1000 strokes : 260.0
Tolerance
cm3/1000 strokes : + 10.0
Check tolerance
cm3/1000s. : + 14.0

## LOW IDLE

Rated speed rpm : 350 5.40 Rack travel in mm : : +- 0.10 Tolerance mm Del. quantity 19.0 cm3/1000 strokes : Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000s. : +-6.0 Spreed Tolerance 6.0 cm3/1000 strokes : Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.05.98 Edition Test oil : ISO 4113

Combination No. : 0 402 648 931

Injection pump

Pump designation : PE8P12OA32OLS7847-2

EP type number : 0 412 628 885

Governor

Governer design. : RQ300/950PA1032-10

Governer no. : 0 421 801 735

Cust. part No. : 0230741302

Customer-spec. information Customer : MB-NFZ : 0M402 LA Motor Power KW : 280.0

#### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C : +- 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5 Tolerance bar : +- 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3 x length mm : 1000 3.0

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.55 Tolerance mm : + 0.05

Check

: +- 0.10 tolerance mm

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

Phasing : 0-45-90-135-180

: -225-270-315 : +- 0.50

Tolerance Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : <del>+-</del> 0.75

Barrel no. : 8

## BASIC SETTING

Rated speed rpm : 550

M15

	•
Rack travel in mm : 14.80 Tolerance mm : +- 0.05	Rated speed rpm : 736 guide sleeve travel mm : 6.13
Del. quantity cm3/1000 strokes : 239.0	Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : +- 1.0	+ Rated speed rpm : 415 + guide sleeve + travel mm : 3.82
Check tolerance	Tolerance mm : + 0.10
cm3/1000s. : + 4.0	Rated speed rpm : 550 guide sleeve
Spreed	travel mm : 6.00 Tolerance mm : +- 0.10
Tolerance cm3/1000 strokes : 6.0	+ Rated speed rpm : 1160 - guide sleeve
Check tolerance cm3/1000s. : 9.0	travel mm : 11.50 Tolerance mm : +- 0.50
	Rated speed rpm : 833 guide sleeve
Rated speed rpm : 300	travel mm : 6.38 Tolerance mm : + 0.10
Rack travel in mm : 5.70  Tolerance mm : +- 0.10  Del. quantity	GUIDE SLEEVE POSITION
cm3/1000 strokes : 13.0 Tolerance	‡
cm3/1000 strokes : + 3.0 Check tolerance	control lever position degree : 109
cm3/1000s. : +- 6.0 Spreed Tolerance	+ Rated speed rpm : 600 + Rack travel in mm : 20.00
cm3/1000 strokes : 6.0 Check tolerance	Tolerance mm : + 0.80
cm3/1000s. : 10.0	FULL LOAD DELIVERY AT FULL LOAD STOP
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	Rated speed rpm : 550 Aneroid pressure
	+ hPa : 1200 + Del. quantity
GUIDE SLEEVE TRAVEL	+ cm3/1000 strokes : 239.0 + Tolerance
Rated speed rpm : 1005 guide sleeve travel mm : 6.84	+ cm3/1000 strokes : + 1.0 + Check tolerance + cm3/1000s. : + 4.0
Tolerance mm : + 0.10	Spreed Tolerance
Rated speed rpm : 300 guide sleeve	cm3/1000 strokes : 6.0 Check tolerance
travel mm : 1.74 Tolerance mm : +- 0.10	+ cm3/1000s. : 9.0
Rated speed rpm : 950 guide sleeve	CONTROL LEVER
travel mm : 6.50 Tolerance mm : +- 0.10	‡

		† Tolerance mm	: + 0.10
control lever position degree tolerance degree		Rated speed rpm rack travel mm Tolerance mm	
RATED SPEED rack travel mm Rated speed rpm Tolerance 1/min Check	: 998 : +- 8	ANEROID/ALTITUDE COMPENSATOR TEST	
speed 1/min	: + 13	SETTING	
rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min	: 1085	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : 14.80
rack travel mm Tolerance mm Rated speed rpm	: +- 0.75	Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: - : 10.60
		MEASUREMENT	
LOW IDLE		Rated speed rpm	
control lever position degree tolerance degree		Pressure hPa rack travel mm Tolerance mm	
Setting point w/ou	ut bumper spring	Pressure hPa rack travel mm Tolerance mm	: 11.90
CRT mm min.		Start interlock	
Testing:	700	Rated speed rpm Rated speed rpm	: > 100 : > 220
Rated speed rpm rack travel mm Tolerance mm	: 300 : 5.70 : +- 0.10	Check speed 1/min Check	: > 80
rack travel mm Rated speed rpm Tolerance 1/min	: 2.00 : 420 : +- 20	speed 1/min	: > 240
TORQUE CONTROL		+ FUEL DELIVERY CH	AKACIERISIICS
Rated speed rom rack travel mm Tolerance mm	: 550 : 14.80 : + 0.05	Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 950
Rated speed rpm rack travel mm Tolerance mm	: 950 : 14.15 : + 0.10	cm3/1000 strokes Tolerance cm3/1000 strokes	
	: 860 : 14.35	- Check tolerance - cm3/1000s. - Spreed	: +- 5.0

Tolerance cm3/1000 strokes : 8.0 Check tolerance : 12.0 cm3/1000S.

14.35 rack travel mm : + 0.10 Tolerance mm

Aneroid pressure

Rated speed rpm 400 Del. quantity cm3/1000 strokes : 107.0 Tolerance cm3/1000 strokes :  $\leftarrow$  1.0 Check tolerance

cm3/1000S.

4.0 Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000S. 12.0

# STARTING FUEL DELIVERY

100 Rated speed rpm :

Del. quantity cm3/1000 strokes : 220.0

Tolerance

cm3/1000 strokes : + 10.0

Check tolerance

cm3/1000s. : + 14.0

### LOW IDLE

Rated speed rpm : 300

5.70 Rack travel in mm : Tolerance mm : +- 0.10

Del. quantity

cm3/1000 strokes : 13.0

Tolerance

cm3/1000 strokes : +-3.0

Check tolerance

cm3/1000s. 6.0

Spreed

Tolerance

cm3/1000 strokes : 6.0

Check tolerance

cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 04.05.98 Test oil : ISO 4113

Combination No. : 0 402 666 804

Injection pump

Pump designation : PE6P120A320/3LS7893

EP type number : 0 412 626 952

Governor

Governer design. : RSV600...1050P0A636 Governer no. : 0 421 833 544

Cust. part No. : 0270743902

Customer-spec. information Customer : MB-NFZ Motor : OM 441 : OM 441 LA Motor Power KW : 285.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0 temp. °C

Overflow valve : 2 417 413 077

Inlet press. bar : 1.5 Tolerance bar : + 0.1

Overflow quantity
min. l/h : 120
Tolerance l/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter: x Length mm : 1000

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : ← 1.0

Prestroke mm : 4.75
Tolerance mm : + 0.05 Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm : +- 0.50

Firing order : 6-3-5-2-4-

Phasing : 0-45-120-165-240

: -285

Tolerance : **←** 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : +- 0.75

Barrel no. : 6

BASIC SETTING

	1
Rack travel in mm : 13.70	Ţ
Tolerance mm : ← 0.05	+ FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity	Rated speed rpm : 1075
cm3/1000 strokes : 251.0	+ Aneroid pressure
Talanana	+ hPa : 1200 + Del. quantity
Tolerance cm3/1000 strokes : +- 1.0	+ cm3/1000 strokes : 251.0
	+ Tolerance
Check tolerance cm3/1000s. : +- 4.0	+ cm3/1000 strokes : +- 1.0 + Check tolerance
CIID/ 10003 +- 4.0	+ cm3/1000s. : +- 4.0
Spreed	Spreed
Tolerance	+ Tolerance + cm3/1000 strokes : 6.0
cm3/10CO strokes : 6.0	+ Check tolerance
	+ cm3/1000s. : 9.0
Check tolerance cm3/1000S. : 9.0	†
cm3/1000s. : 9.0	Ţ
	CONTROL LEVER
Rated speed rpm : 600	t control lever
nated speed that . Goo	position degree : 86.0
Rack travel in mm : 2.00	tolerance degree : +- 4.0
Tolerance mm : + 0.10  Del. quantity	+ RATED SPEED
cm3/1000 strokes : 17.0	+ rack travel mm : 12.70
Tolerance	+ Rated speed rpm : 1115
cm3/1000 strokes : + 3.0	Tolerance 1/min : + 5
Check tolerance cm3/1000S. : +- 6.0	ASSEMBLY GOVERNOR SETTING
Spreed	+
Tolerance	+ Rated speed rpm : 1070
cm3/1000 strokes : 8.0 Check tolerance	rack travel mm : 12.70
cm3/1000s. : 12.0	Rated speed rpm : 1102
	+ Tolerance 1/min : +- 4
(B) SETTING OF INJECTION PUMP	rack travel mm : 4.00
WITH GOVERNOR	rack travel mm : 0.85
	Tolerance mm : +- 0.55
	Rated speed rpm : 1300
GUIDE SLEEVE POSITION	Į.
	Rated speed rpm : 1071
control lever	rack travel mm : 12.70
position degree : - 3	Rated speed rpm : 1103
Rated speed rpm : 800	+ Tolerance 1/min : +- 4
Dools have all the real control of 50	rack travel mm : 4.00
Rack travel in mm : 0.50 Tolerance mm : + 0.20	+ rack travel mm : 0.85
1. Cott di 100 mm	+ Tolerance mm : + 0.55
governor spring	Rated speed rpm : 1300
pre-tension click setting x : 1.50	İ
CCICK SECCING A . 1.30	Rated speed rpm : 1072
	Rated speed rpm : 1072 rack travel mm : 12.70

Rated speed rpm Tolerance 1/min rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1300
Rated speed rpm rack travel mm	: 1073 : 12.70
Rated speed rpm Tolerance 1/min rack travel mm	: 1105 : +- 4 : 4.00
rack travel mm Tolerance mm Rated speed rpm	: 0.85 : +- 0.55 : 1300
rack travel mm	: 12.70
rack travel mm	: 4.00
rack travel mm Tolerance mm	: 0.85 : ← 0.55
rack travel mm	: 12.70
rack travel mm	: 4.00
rack travel mm Tolerance mm	: 0.85 : +- 0.55
LOW IDLE	
control lever position degree tolerance degree	: 71.0 : +- 4.0
Setting point w/c	out bumper spring
Rated speed rpm	: 100
CRT mm min.	: > 19.50
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 600 : 2.00 : + 0.10
rack travel mm	: 2.00 : 630

TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1075 : 13.70 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 800 : 14.75 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 14.35 : +- 0.15
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
SETTING  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 14.75 : ← 0.10
Rated speed rpm Pressure hPa rack travel mm	: 1200 : 14.75
Rated speed rpm Pressure hPa rack travel mm Tolerance mm Rated speed rpm Pressure hPa rack travel mm	: 1200 : 14.75 : + 0.10 : 500 : - : 9.20
Rated speed rpm Pressure hPa rack travel mm Tolerance mm  Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : 14.75 : + 0.10 : 500 : - : 9.20

FUEL DELIVERY CHARACTERISTICS

Pressure hPa : 400 rack travel mm : 11.20 Tolerance mm : + 0.20

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm3/1000 strokes : 291.0
Tolerance
cm3/1000 strokes : +- 3.0
Check tolerance

cm3/1000s. : +- 6.0

rack travel mm : 14.35 Tolerance mm : + 0.15

Aneroid pressure

hPa : Rated speed rpm : 500
Del. quantity

cm3/1000 strokes : 155.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

### STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity

cm3/1000 strokes : 270.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : + 19.0

### LOW IDLE

Rated speed rpm : 600

Rack travel in mm : 2.00 Tolerance mm : + 0.10

Del. quantity

cm3/1000 strokes : 17.0

Tolerance

cm3/1000 strokes : +- 3.0

Check tolerance

cm3/1000s. : +- 6.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.05.98 Edition Edition : 06.05.98 Test oil : ISO 4113

Combination No. : 0 402 676 839

Injection pump

Pump designation : PE6P120A320LS7898 EP type number : 0 412 626 957

Governor

Governer design. : RSV350...850P0A683

Governer no. : 0 421 833 602

Cust. part No. : 0280743102

Customer-spec. information Customer : MB-NFZ : OM441 A Motor Power KW : 165.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C 40 : +- 2.0 Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : ← 0.1

Overflow quantity

min. L/h : 220
Tolerance L/h : +- 20.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter :

x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

### BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.25 Tolerance mm : + 0.05 Check tolerance mm : +- 0.10

Rack travel in mm: 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 6-3-5-2-4-: 1

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

: +- 0.10 Tolerance

Check

tolerance °NW : +- 0.75

Barrel no. : 6

### BASIC SETTING

	ı
Rack travel in mm: 12.70	
Tolerance mm : + 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 191.0	Rated speed rpm : 850 Aneroid pressure
Tolerance cm3/1000 strokes : + 1.0	hPa : 1000 Del. quantity cm3/1000 strokes : 191.0
Check tolerance - 4.0 -	Tolerance cm3/1000 strokes : +- 1.0 Check tolerance
Spreed	cm3/1000s. : + 4.0 Spreed
Tolerance - 6.0 - 6.0	Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 10.0
Check tolerance cm3/1000s. : 10.0	
	CONTROL LEVER
Rated speed rpm : 350	control lever position degree : 89.0
Rack travel in mm: 5.20 - Tolerance mm: + 0.10 - Del. quantity	tolerance degree : +- 4.0
cm3/1000 strokes : 19.0	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes : +- 3.0 Check tolerance cm3/1000S. : +- 6.0	Rated speed rpm : 875 rack travel mm : 11.70
Spreed Tolerance	Rated speed rpm : 940 Tolerance 1/min : +- 4
cm3/1000 strokes : 8.0 - Check tolerance - cm3/1000s. : 12.0 -	rack travel mm : 4.00
cm3/1000s. : 12.0	rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1050
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	
	Rated speed rpm : 876 - rack travel mm : 11.70
GUIDE SLEEVE POSITION -	Rated speed rpm : 941 Tolerance 1/min : +- 4 rack travel mm : 4.00
control lever - position degree : - 3 - Rated speed rpm : 800 -	rack travel mm : 0.85 Tolerance mm : +- 0.55
Rack travel in mm: 0.50	- Rated speed rpm : 1050
Tolerance mm : +- 0.20 governor spring	- Rated speed rpm : 877 - rack travel mm : 11.70
pre-tension click setting x : 3.25	- Rated speed rpm : 942 - Tolerance 1/min : +- 4
+	- rack travel mm : 4.00

rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1050	rack travel mm : 2.00 Rated speed rpm : 395
	+ SET IDLE AUXILIARY SPRING
Rated speed rpm : 878 rack travel mm : 11.70	rack travel mm : 2.00
Rated speed rpm : 943 Tolerance 1/min : + 4 rack travel mm : 4.00	TORQUE CONTROL Rated speed rpm : 850 rack travel mm : 12.70 Tolerance mm : +- 0.05
rack travel mm : 0.85 Tolerance mm : + 0.55 Rated speed rpm : 1050	Rated speed rpm : 600 rack travel mm : 12.70 Tolerance mm : + 0.10
Rated speed rpm : 879 rack travel mm : 11.70 Rated speed rpm : 944	ANEROID/ALTITUDE COMPENSATOR TEST
Tolerance 1/min : + 4 rack travel mm : 4.00	SETTING
rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1050	Rated speed rpm : 500 Pressure hPa : 1000 rack travel mm : 12.70 Tolerance mm : + 0.05
Rated speed rpm : 880 rack travel mm : 11.70	Rated speed rpm : 500 Pressure hPa : - rack travel mm : 11.00
Rated speed rpm : 945 Tolerance 1/min : +- 4 rack travel mm : 4.00	Tolerance mm : + 0.15  MEASUREMENT
rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1050	Rated speed rpm : 500 Pressure hPa : 380
	rack travel mm : 11.60 Tolerance mm : +- 0.20
LOW IDLE	+ Pressure hPa : 450 + rack travel mm : 12.50 + Tolerance mm : + 0.15
position degree : 73.0 tolerance degree : +- 4.0	Toterance man . T 0.13
Setting point w/out bumper spring	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm : 100	Aneroid pressure
CRT mm min. : > 19.00	hPa : 1000 Rated speed rpm : 600
Testing:	Del. quantity cm3/1000 strokes : 190.0
Rated speed rpm : 350 rack travel mm : 5.20 Tolerance mm : +- 0.10	Tolerance cm3/1000 strokes : + 3.0

SET IDLE AUXILIA	RY SPRING
rack travel mm	: 2.00
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 850 : 12.70 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 600 : 12.70 : + 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 12.70 : +- 0.05
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: -
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 380 : 11.60 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 450 : 12.50 : +- 0.15
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance	
cm3/1000 strokes	: <del>+-</del> 3.0

Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: ← 6.0 : 8.0 : 12.0
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000s strokes Check tolerance cm3/1000s. Spreed Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 500 : 145.0 : + 1.0 : + 4.0 : 8.0 : 12.0
STARTING FUEL DEL Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	IVERY  : 100  : 190.0  : + 10.0  : + 14.0
LOW IDLE  Rated speed rpm  Rack travel in mm  Tolerance mm  Del. quantity  cm3/1000 strokes  Tolerance  cm3/1000 strokes  Check tolerance  cm3/1000s.  Spreed  Tolerance  cm3/1000 strokes  Check tolerance  cm3/1000s.	

### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : ISO 4113

: 05.05.98

Combination No. : 0 402 678 827

Injection bumb

Pump designation : PE8P120A321\@386 EP type number : 0 412 628 % 5

Governor

Governer design. : RSV550...850P0A574

: -1

Governer no. : 0 421 833 476

Cust. part No. : 0260741102

Customer-spec. information Customer : MB-NFZ : 0M442LA Motor Power KW : 329.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C Tolerance °C

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Overflow quantity

min. L/h : 120
Tolerance L/h : +- 10.0

Test nozzle holde

: 1 688 901 105 assembly

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0

x Length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 5.05 Tolerance mm : + 0.05

Check

tolerance mm : ← 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 8-7-2-6-3

: - 5- 4- 1

: 0-45-90-135-180 Phasing : -225-270-315

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : + 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 830

M27

		T
Rack travel in mm Tolerance mm	: 15.40 : +- 0.05	FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 830
Del. quantity cm3/1000 strokes	: 264.0	Aneroid pressure hPa : 1200 Del. quantity
Tolerance cm3/1000 strokes	: + 1.0	cm3/1000 strokes : 264.0 Tolerance cm3/1000 strokes : + 1.0
Check tolerance cm3/1000s.	: + 4.0	Check tolerance cm3/1000s. : + 4.0
Spreed	***************************************	Tolerance
Tolerance cm3/1000 strokes	: 6.0	cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. : 9.0
Check tolerance cm3/1000s.	: 9.0	
	-	+ CONTROL LEVER +
Rated speed rpm	: 550 -	control lever position degree : 84.0 tolerance degree : +- 4.0
Rack travel in him Tolerance mm Del. quantity	: +- 0.10	ASSEMBLY GOVERNOR SETTING
cm3/1000 strokes Tolerance	: 19.0	Rated speed rpm : 870
cm3/1000 strokes Check tolerance	: <del>+</del> 3.0	rack travel mm : 14.40
cm3/1000s. Spreed	: +- 6.0	Rated speed rpm : 920 Tolerance 1/min : +- 4
Tolerance cm3/1000 strokes	: 6.0	rack travel mm : 4.00
Check tolerance cm3/1000s.	: 10.0	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1050
(B) SETTING OF INJ	ECTION DIME	
WITH GOVERNOR	ECTION FORIE	Rated speed rpm : 871 rack travel mm : 14.40
GUIDE SLEEVE POSIT	TION	Rated speed rpm : 921 Tolerance 1/min : +- 4 rack travel mm : 4.00
control lever position degree Rated speed rpm	: - 3 : 800	rack travel mm : 0.85 Tolerance mm : +- 0.55 Rated speed rpm : 1050
Rack travel in mm Tolerance mm	: 0.50 : + 0.20	Rated speed rpm : 872 rack travel mm : 14.40
governor spring pre-tension click setting x	: 1.50	Rated speed rpm : 922 Tolerance 1/min : +- 4
	7	rack travel mm : 4.00

		1
rack travel mm	. 0.85	rack travel mm : 2.00
	. 0.65	Rated speed rpm : 560
Tolerance mm		Talamana 4/min
Rated speed rpm	: 1050	Tolerance 1/min : +- 30
	2.77	+ SET IDLE AUXILIARY SPRING
Rated speed rpm	: 8/3	†
rack travel mm	: 14.40	rack travel mm : 2.00
		<del>†</del>
Rated speed rpm		
Tolerance 1/min		+ TORQUE CONTROL
rack travel mm	: 4.00	Rated speed rpm : 830
		rack travel mm : 15.40
rack travel mm		Tolerance mm : + 0.05
Tolerance mm		+
Rated speed rpm	: 1050	+ Rated speed rpm : 600
		+ rack travel mm : 15.40
		† Tolerance mm : +- 0.10
Rated speed rpm	: 874	+
rack travel mm	: 14.40	+
		+ ANEROID/ALTITUDE
Rated speed rpm		+ COMPENSATOR TEST
Tolerance 1/min	: +- 4	+
rack travel mm	: 4.00	+
		+ SETTING
rack travel mm	: 0.85	+
Tolerance mm		Rated speed rpm : 500
Rated speed rpm		+ Pressure hPa : 1200
учестве оргова уриг		+ rack travel mm : 15.40
		+ Tolerance mm : + 0.10
Rated speed rom	: 875	1
Rated speed rpm rack travel mm	: 875 : 14.40	Rated speed rpm : 500
rack craves wan	. ,,,,,	Pressure hPa : -
Rated speed rpm	• 925	rack travel mm : 10.30
Tolerance 1/min		Tolerance mm : +- 0.20
rack travel mm		
TOOK ET OVEC THAT	. 7.55	MEASUREMENT
rack travel mm	: 0.85	1.230(12)
Tolerance mm	: +- 0.55	Rated speed rpm : 500
Rated speed rpm	: 1050	Tracea opeca i piii . 300
varen sheen thu	. 1050	Pressure hPa : 500
		- rack travel mm : 12.35
LOW IDLE		Tolerance mm : +- 0.20
FOM INFE		
		Pressure hPa : 710
control lever		+ rack travel mm : 14.30
	. <b>7</b> 2 0	+ Tolerance mm : + 0.20
position degree		T locerance iiiii . T 0.20
tolerance degree	. <del></del> 4.0	T
Catting mades : /-	urt human annin	Ť
Setting point w/c	out bumper spring	ELIEL DEL TUEDY CHADACTEDISTICS
Dakad are and are	. 100	+ FUEL DELIVERY CHARACTERISTICS
Rated speed rpm	: 100	†
007	> 40.60	An-maid 2
CRT mm min.	: > 19.00	+ Aneroid pressure
		+ hPa : 1200
Testing:		Rated speed rpm : 600
	<b></b> -	+ Del. quantity
Rated speed rpm		+ cm3/1000 strokes : 283.0
rack travel mm	: 3.90	+ Tolerance
Tolerance mm	: +- 0.10	+ cm3/1000 strokes : +- 3.0

Rated speed rpm Tolerance 1/min	: 2.00 : 560 : +- 30
SET IDLE AUXILIAN	
rack travel mm	: 2.00
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 15.40
Rated speed rpm rack travel mm Tolerance mm	: 600 : 15.40 : +- 0.10
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa Fack travel mm Tolerance mm	: 500 : 1200 : 15.40 : ← 0.10
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : - : 10.30 : +- 0.20
MEASUREMENT	
Rated speed rpm	: 500
Pressure hPa rack travel mm Tolerance mm	: 500 : 12.35 : +- 0.20
Pressure hPa rack travel mm Tolerance mm	: 710 : 14.30 : ← 0.20
FUEL DELIVERY CHA	RACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes	: 1200 : 600 : 283.0
Tolerance cm3/1000 strokes	: +- 3.0

Check tolerance cm3/1000s. 6.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 Aneroid pressure hPa 500 Rated speed rpm Del. quantity cm3/1000 strokes : 174.0 Tolerance cm3/1000 strokes 1.0 Check tolerance cm3/1000s. 4.0 Spreed Tolerance cm3/1000 strokes : 8.0 Check tolerance cm3/1000s. 12.0 STARTING FUEL DELIVERY Rated speed rpm 100 Del. quantity cm3/1000 strokes : 275.0 Tolerance cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : **←** 19.0 LOW IDLE Rated speed rpm 550 Rack travel in mm : 3.90 Tolerance mm 0.10 Del. quantity cm3/1000 strokes : 19.0 Tolerance cm3/1000 strokes : +-3.0 Check tolerance cm3/1000S. 6.0 Spreed Tolerance cm3/1000 strokes : 6.0 Check tolerance cm3/1000s. 10.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil : 05.05.98 : ISO 4113

Combination No. : 0 402 746 632

Injection pump

Pump designation: PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governer design. : RQ300/1050PA1340 Governer no. : 0 421 801 820

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE Motor : 8460.41s.7031

Power KW

: 254.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5 Tolerance bar : + 0.1

Overflow quantity min. L/h : 160 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar Tolerance bar : + 1.5 Test lines : 1 680 750 089

Outside diameter : 8.0

3.0 x inside diameter :

x Length mm :

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 20.50Tolerance mm : +-0.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

: **←** 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.95

Tolerance mm : +- 0.05	+ guide sleeve
	travel mm : 6.13
Del. quantity	+ Tolerance mm : $+$ 0.10
cm3/1000 strokes : 289.0	<del>}</del>
	+ Rated speed rpm : 399
Tolerance	+ guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 4.74
Olio, 1999 Sel Giles	+ Tolerance mm : +- 0.10
Check tolerance	1000141100 11111
cm3/1000s. : +- 4.0	Rated speed rpm : 480
(115) 16065.	+ guide sleeve
Canad	travel mm : 6.00
Spreed	
<b>▼</b> .1	† Tolerance mm : + 0.10
Tolerance	1270
cm3/1000 strokes : 5.0	+ Rated speed rpm : 1270
	+ guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 9.0	+ Tolerance mm : +- 0.50
**************************************	+
<del></del>	+ Rated speed rpm : 877
	+ guide sleeve
Rated speed rpm : 300	+ travel mm : 6.38
•	+ Tolerance mm : +- 0.10
Rack travel in mm: 6.00	1
Tolerance mm : + 0.10	
Del. quantity	→ GUIDE SLEEVE POSITION
cm3/1000 strokes : 23.0	_
Tolerance	1
cm3/1000 strokes : +- 3.0	- control lever
	position degree : 109
Check tolerance	
cm3/1000s. : +- 6.0	+ Rated speed rpm : 500
Spreed	7 2 4 3 20 20
Tolerance	+ Rack travel in mm : 20.00
cm3/1000 strokes : 8.0	Tolerance mm : +- 0.80
Check tolerance	+
cm3/1000s. : 12.0	+
	+ FULL LOAD DELIVERY AT FULL LOAD STOP
	+
(B) SETTING OF INJECTION PUMP	+ Rated speed rpm : 1050
WITH GOVERNOR	+ Aneroid pressure
	+ hPa : 1200
	+ Del. quantity
GUIDE SLEEVE TRAVEL	+ cm3/1000 strokes : 289.0
	+ Tolerance
Rated speed rpm : 1110	+ cm3/1000 strokes : +- 1.0
guide steeve	+ Check tolerance
travel mm : 6.85	+ cm3/1000s. : +- 4.0
Tolerance mm : +- 0.15	Spreed
Ocerance min O.15	+ Tolerance
Rated speed rpm : 300	cm3/1000 strokes : 5.0
	Check tolerance
guide sleeve travel mm : 1.97	- cm3/1000s. : 9.0
	T (11137 10003 7.0
Tolerance mm : +- 0.20	T
	1
Rated speed rpm : 1050	+ RATED SPEED
guide sleeve	+ rack travel mm : 11.90
travel mm : 6.50	+ Rated speed rpm : 1103
	+ Tolerance 1/min : +- 8
Tolerance mm : + 0.10	
Tolerance mm : +- 0.10	+ Check
	+ Check
	+ Check

rack travel mm Rated speed rpm Tolerance 1/min Check speed 1/min rack travel mm Tolerance mm Rated speed rpm	: +- 20 : 0.50 : +- 0.50
LOW IDLE	
control lever position degree tolerance degree	: 74.0 : +- 4.0
Setting point w/o	out bumper spring
Rated speed rpm	: 200
CRT mm min.	: > 8.15
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 6.00 : + 0.10
rack travel mm Rated speed rpm Tolerance 1/min	
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1050 : 12.95 : +- 0.05
Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.10 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	
Rated speed rpm rack travel mm Tolerance mm	: 875 : 13.25 : + 0.15
Rated speed rpm rack travel mm Tolerance mm	: 500 : 14.40 : +- 0.15

ANEROID/ALTITUDE COMPENSATOR TEST		
SETTING		
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : 1200 : 14.10 : + 0.10	
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 500 : − : 9.30 : ← 0.20	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 250 : 10.45 : + 0.20	
Pressure hPa rack travel mm Tolerance mm	: 500 : 12.60 : ← 0.05	
Start interlock		
Rated speed rpm Rated speed rpm	: > 200 : < 240	
Check speed 1/min Check	: > 180	
speed 1/min	: < 260	
FUEL DELIVERY CHARACTERISTICS		
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 500	
cm3/1000 strokes Tolerance	: 322.0	
cm3/1000 strokes Check tolerance	: +- 4.0	
cm3/1000s.	: <del>+-</del> 7.0	

Aneroid pressure

hPa 600 Rated speed rpm :

Del. quantity

cm3/1000 strokes : 151.0

Tolerance

cm3/1000 strokes : +- 1.0

Check tolerance

cm3/1000s. : +- 4.0

# STARTING FUEL DELIVERY

Rated speed rpm 100 rack travel mm 11.30 Tolerance mm : +- 0.50 Del. quantity

cm3/1000 strokes : 110.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. : +- 19.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 6.00 : **←** 0.10 Tolerance mm Del. quantity

cm3/1000 strokes : 23.0

Tolerance

3.0 cm3/1000 strokes : +--

Check tolerance

cm3/1000s. : +- 6.0 Spreed

Tolerance

8.0 cm3/1000 strokes :

Check tolerance

12.0 cm3/1000S.

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

: 06.05.98 Edition : ISO 4113 Test oil

Combination No. : 0 402 746 633

Injection pump

Pump designation : PES6P120A720RS7366

EP type number : 0 412 726 933

Governor

Governer design. : RQ300/1050PA1344 Governer no. : 0 421 801 821

Cust. part No. :

Customer-spec. information

Customer : IVECO-FRANCE : 8460.41R.7143 Motor

Power KW : 214.0

# TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C 40 Tolerance °C : +- 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : Tolerance bar :  $\leftarrow$  0.1

Overflow quantity

min. L/h : 160 Tolerance L/h : + 20.0

Test nozzle holde

assembly : 1 688 901 105

Opening pressure

: 208.5 bar : +- 1.5 Tolerance bar

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : + 1.0

Prestroke mm : 2.85
Tolerance mm : +- 0.05 : +- 0.05 Tolerance mm Check

tolerance mm : + 0.10

Rack travel in mm : 20.50 Tolerance mm :  $\leftarrow$  0.50

: 1-5-3-6-2-Firing order : 4

Phasing : 0-60-120-180-240

: -300

Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Start of delivery mark

Check

tolerance °NW : +- 0.40

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.55

Tolerance mm : + 0.05 +	Del. quantity
Not supplied to	cm3/1000 strokes : 234.0
Del. quantity + cm3/1000 strokes : 234.0 +	Tolerance cm3/1000 strokes : +- 1.0
CIIIJ/ 1000 SEFORES . 254.0	Check tolerance
Tolerance	cm3/1000s. : +- 4.0
cm3/1000 strokes : + 1.0	Spreed
+	Tolerance
Check tolerance	cm3/1000 strokes : 5.0
cm3/1000s. : +- 4.0 +	Check tolerance
	cm3/1000s. : 9.0
Spreed	
Talananaa	RATED SPEED
Tolerance + cm3/1000 strokes : 5.0 +	rack travel mm : 10.50
this/1000 strokes . 3.0	Rated speed rpm : 1103
Check tolerance	Tolerance 1/min : + 8
cm3/1000S. : 9.0	Check
	speed 1/min : +- 13
-	
+	rack travel mm : 4.00
Rated speed rpm : 300 +	Rated speed rpm : 1175
<b>.</b>	Tolerance 1/min : +- 15
Rack travel in mm: 6.30	Check speed 1/min : +- 20
Tolerance mm : + 0.10	speed 1/min : +- 20
Del. quantity + cm3/1000 strokes : 23.0 +	rack travel mm : 0.50
Tolerance	Tolerance mm : +- 0.50
cm3/1000 strokes : +- 3.0	Rated speed rpm : 1350
Check tolerance	The second secon
cm3/1000S. : + 6.0	
Spreed	
Tolerance	
cm3/1000 strokes : 8.0	LOW IDLE
Check tolerance	
cm3/1000s. : 12.0 +	control leven
Ţ	control lever position degree : 71.0
(B) SETTING OF INJECTION PUMP	tolerance degree : + 4.0
WITH GOVERNOR +	toterance degree 4.0
	Setting point w/out bumper spring
+	
	Rated speed rpm : 200
GUIDE SLEEVE POSITION +	
†	CRT mm min. : > 7.80
†	Tanting
control lever	Testing:
position degree : 109 +	Pated speed rnm : 300
Rated speed rpm : 500	Rated speed rpm : 300
Rated speed rpm : 500	rack travel mm : 6.30
Rated speed rpm : 500 + Rack travel in mm : 20.00 +	Rated speed rpm : 300 rack travel mm : 6.30 Tolerance mm : +- 0.10
Rated speed rpm : 500 + Rack travel in mm : 20.00 +	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00
Rated speed rpm : 500  Rack travel in mm : 20.00  Tolerance mm : + 0.80	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 395
Rated speed rpm : 500 + Rack travel in mm : 20.00 +	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00
Rated speed rpm : 500  Rack travel in mm : 20.00  Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 395
Rated speed rpm : 500  Rack travel in mm : 20.00  Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : +- 20
Rated speed rpm : 500  Rack travel in mm : 20.00  Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050  Aneroid pressure	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : +- 20  TORQUE CONTROL
Rated speed rpm : 500  Rack travel in mm : 20.00  Tolerance mm : + 0.80  FULL LOAD DELIVERY AT FULL LOAD STOP  Rated speed rpm : 1050	rack travel mm : 6.30 Tolerance mm : +- 0.10  rack travel mm : 2.00 Rated speed rpm : 395 Tolerance 1/min : +- 20

Tolerance mm		‡	Check speed 1/min : < 260
Rated speed rpm rack travel mm Tolerance mm	: 12.75 : + 0.10	1	FUEL DELIVERY CHARACTERISTICS
Rated speed rpm rack travel mm Tolerance mm	: 500 : 12.75 : ← 0.10	+	Aneroid pressure hPa : 1200 Rated speed rpm : 500
Rated speed rpm rack travel mm Tolerance mm	: 12.50	+	rack travel mm : 12.75 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 245.0
Rated speed rpm rack travel mm Tolerance mm	: 875 : 11.90 : ← 0.15	<del> </del>	Tolerance cm3/1000 strokes : +- 4.0 Check tolerance cm3/1000s. : +- 7.0
Rated speed rpm rack travel mm Tolerance mm	: 13.30	Ī	Aneroid pressure
ANEROID/ALTITUDE COMPENSATOR TEST	·		Rated speed rpm : 600 Del. quantity cm3/1000 strokes : 152.0 Tolerance
SETTING		<del> </del>	cm3/1000 strokes : + 1.0 Check tolerance cm3/1000s. : + 4.0
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 1200 : 12.75	‡	STARTING FUEL DELIVERY
Rated speed rpm Pressure hPa rack travel mm Tolerance mm		† † † †	Rated speed rpm : 100 rack travel mm : 11.60 Tolerance mm : + 0.30 Del. quantity cm3/1000 strokes : 105.0 Tolerance
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: 260 : 10.40	‡	cm3/1000 strokes : +- 15.0 Check tolerance cm3/1000s. : +- 19.0
Pressure hPa rack travel mm Tolerance mm	: 420 : 12.00 : ← 0.05	+++++++++++++++++++++++++++++++++++++++	LOW IDLE Rated speed rpm : 300
Start interlock	. > 400	<del> </del>	Rack travel in mm : 6.30 Tolerance mm : + 0.10 Del. quantity cm3/1000 strokes : 23.0
Rated speed rpm Rated speed rpm Check		Ŧ	Tolerance : ± 3.0 Check tolerance
speed 1/min	: > 80	+	cm3/1000s. : + 6.0 Spreed

Tolerance cm3/1000 strokes : 8.0

Check tolerance cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition : 30.04.98 Test oil : ISO 4113

Combination No. : 0 402 746 994

Injection pump

Pump designation : PES6P120A320RS7344

EP type number : 0 412 726 914

Governor

Governer design. : RQV275...1000PA1161

Governer no. : 0 421 814 100

Cust. part No. : CCEP 5143A 66-231

Customer-spec. information

Customer : RENAULT V.I.

Motor

: MIDR 062045 E/41

Power KW : 249.0

### TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet

temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 071

Inlet press. bar : 2.5

Test nozzle holde

assembly

: 1 688 901 105

Opening pressure

bar

: 208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter: 3.0

x length mm : 600

#### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar: 26.0 Tolerance bar : + 1.0

Prestroke mm : 4.50 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 11.00 Tolerance mm : +- 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Tolerance

: +- 0.50

Check

tolerance °NW

: **←** 0.75

Start of delivery mark

"NW after s.o.d. : -0.15

Tolerance

: +- 0.50

Check

tolerance °NW

: +- 0.75

Barrel no.

: 1

Beginning of delivery differende

betw. rack trav.

: 21.00

and maximum rack

travel : 11.00 Difference ° CS : 2.25

CRT ZERO POSITION

	+ Tolerance mm : +- 0.25
Rack travel in mm : 12.60 Tolerance mm : + 0.05	Rated speed rpm : 793 guide sleeve
	travel mm : 6.00 Tolerance mm : + 0.25
BASIC SETTING	+
Rated speed rpm : 600	Rated speed rpm : 343 guide sleeve
Del. quantity	travel mm : 2.33 Tolerance mm : +- 0.25
cm3/1000 strokes : 285.0	Rated speed rpm : 393
Tolerance	🕂 guide sleeve
cm3/1000 strokes : +- 1.0	+ travel mm : 2.95 + Tolerance mm : + 0.25
Check tolerance	+
cm $3/1000$ s. : +- 4.0	Rated speed rpm : 500 quide sleeve
Spreed	travel mm : 3.72
·	Tolerance mm : + 0.25
Tolerance cm3/1000 strokes : 5.0	+ Rated speed rpm : 1410
CIID/ 1000 Strokes . J.U	guide sleeve
Check tolerance	+ travel mm : 11.50
cm3/1000s. : 9.0	Tolerance mm : +- 0.50
Reded aread raw : 700	GUIDE SLEEVE POSITION
Rated speed rpm : 300	I
Rack travel in mm : -7.70	control lever
Tolerance mm : + 0.10	position degree : -1
Del. quantity	Rated speed rpm : 1235
cm3/1000 strokes : 28.0 Tolerance	Rack travel in mm : 11.70
cm3/1000 strokes : +- 2.0	+ Tolerance mm : +- 1.30
Check tolerance	+
cm3/1000S. : + 5.0 Spreed	FULL LOAD DELIVERY AT FULL LOAD STOP
Tolerance	+ Rated speed rpm : 600
cm3/1000 strokes : 8.0 Check tolerance	+ Rated speed rpm : 600 + Aneroid pressure
cm3/1000S. : 12.0	+ hPa : 1000
	+ Del. quantity + cm3/1000 strokes : 285.0
(B) SETTING OF INJECTION PUMP	Tolerance
WITH GOVERNOR	+ cm3/1000 strokes : +- 1.0
	+ Check tolerance
CHINE OF EEUE TRAVEL	+ cm3/1000s. : +- 4.0
GUIDE SLEEVE TRAVEL	+ Spreed
	+ Tolerance
Rated speed rpm : 1086	+ Tolerance + cm3/1000 strokes : 5.0
guide sleeve	cm3/1000 strokes : 5.0 Check tolerance
guide sleeve travel mm : 8.09	- cm3/1000 strokes : 5.0
guide sleeve	cm3/1000 strokes : 5.0 Check tolerance
guide sleeve  travel mm : 8.09  Tolerance mm : + 0.25  Rated speed rpm : 300	cm3/1000 strokes : 5.0 Check tolerance cm3/1000S. : 9.0
guide sleeve travel mm : 8.09 Tolerance mm : + 0.25	cm3/1000 strokes : 5.0 Check tolerance

		•
		+ Pressu
control lever		+ rack t
position degree	: 120.0	+ Tolera
tolerance degree	: +- 4.0	†
		+ MEASUR
RATED SPEED	4 00	†
rack travel mm		+ Rated
Rated speed rpm		† _
Tolerance 1/min	: <del>+-</del> 5	+ Pressu
	0.40	+ rack t
rack travel mm Rated speed rpm Tolerance 1/min	: -8.60	† Tolera
Rated speed rpm	: 1215	† _
Tolerance 1/min	: +- 15	+ Pressu
		+ rack t
rack travel mm		+ Tolera
Tolerance mm	: + 0.50	+
Rated speed rpm	: 1300	+
		+ Start
		†
		+ Rated
<del></del>		- + Rated
LOW IDLE		+
		+ Check
		+ speed
control lever		+ Check
position degree	: 65.0	+ speed
tolerance degree	: +- 4.0	+
		†
Setting point w/c	out bumper spring	+ FUEL D
0-4	. 200	†
Rated speed rpm	: 200	Ť
CDT	F 70	+ Aneroi
CRT mm min.	: <b>&lt; −</b> 5.70	+ hPa
<b>-</b>		+ Rated
Testing:		+ Del. q
0-1	. 700	+ cm3/10
Rated speed rpm rack travel mm	: 300	+ Tolera
	: -7.70	+ cm3/10
Tolerance mm	: <del>←</del> 0.10	+ Check
5 ( )	400	+ cm3/10
Rated speed rpm	: 400	†
		† <b>.</b>
TODOUE CONTROL		- + Aneroi
TORQUE CONTROL	. 400	+ hPa
Rated speed rpm	: 600	+ Rated
Dakad amerad	. 4000	+ Del. qu
Rated speed rpm	: 1000	+ cm3/100
Tolerance mm	. +- 0.10	+ Tolera
		+ cm3/100
ANEDOTO / AL TITLING		- + Check - + cm3/100
ANEROID/ALTITUDE		T (m3/100
COMPENSATOR TEST		Ī
		<u> </u>
CETTING		CTADTT
SETTING		+ STARTII
Dated aread are	. 500	T Dated
Rated speed rpm Pressure hPa	: 500	+ Rated
rressure nra	: 1000	† rack ti
Dated aread are	. 500	+ Toleran
Rated speed rpm	: 500	†

Pressure hPa rack travel mm Tolerance mm	: - : -3.40 : +- 0.30	
MEASUREMENT		
Rated speed rpm	: 500	
Pressure hPa rack travel mm Tolerance mm	: 320 : -2.65 : +- 0.15	
Pressure hPa rack travel mm Tolerance mm	: 640 : -0.70 : +- 0.05	
Start interlock		
Rated speed rpm Rated speed rpm	: > 100 : < 225	
Check speed 1/min Check	: > 80	
speed 1/min	: < 245	
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: 284.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1000 : 284.0 : ← 3.0 : ← 6.0 : - 500 : 122.0	
hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.  Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	: 1000 : 284.0 : +- 3.0 : +- 6.0  : 500 : 122.0 : +- 1.0 : +- 4.0	

Del. quantity

cm3/1000 strokes : 150.0

Tolerance

cm3/1000 strokes :  $\leftarrow$  15.0

Check tolerance

cm3/1000s. :  $\leftarrow$  19.0

# LOW IDLE

Rated speed rpm : 300

Rack travel in mm : -7.70Tolerance mm : +-0.10

Del. quantity

cm3/1000 strokes : 28.0

Tolerance

cm3/1000 strokes : +- 2.0

Check tolerance

cm3/1000s. :  $\leftarrow$  5.0

Spreed

Tolerance

cm3/1000 strokes : 8.0

Check tolerance

cm3/1000s. : 12.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 04.05.98 : ISO 4113

Combination No. : 0 402 776 803

Injection pump

Pump designation: PES6P120A720LS7107

: -1

EP type number : 0 412 726 805

Governor

Governer design. : RSV350...750P0A520

: -1

Governer no. : D 421 833 262

Cust, part No. :

Customer-spec. information Customer : MB-NFZ Motor : OM447 A

Power KW

: 180.0

### TEST BENCH REQUIREMENTS

Inlet line : 4.1

Test oil inlet

temp. °C 40 Tolerance °C : **←** 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : Tolerance bar : + 0.1

Overflow quantity

min. L/h : 110 Tolerance L/h : + 10.0

Test nozzle holde

assembly : 1 688 901 019

Opening pressure

: 208.5 bar

Tolerance bar : ← 1.5

Test lines : 1 680 750 067

Outside diameter : 6.0

x inside diameter: 1.5

x length mm : 1000

### REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 26.0 Tolerance bar : +- 1.0

Prestroke mm : 5.25
Tolerance mm : + 0.05 Check tolerance mm : + 0.10

Rack travel in mm : 10.50 Tolerance mm :  $\leftarrow$  0.50

Firing order : 6-2-4-1-5-

Phasing : 0-60-120-180-240

: -300

: +- 0.50 Tolerance

Check

tolerance °NW : +- 0.75

Start of delivery mark

Tolerance : +- 0.10

Check

tolerance °NW : + 0.75

Barrel no. : 6

# BASIC SETTING

Dock thought in my 1/ 05	
Rack travel in mm : 14.85 - Tolerance mm : +- 0.05 -	FULL LOAD DELIVERY AT FULL LOAD STOP
Total drive min . To U.U.	TOLL LOND DELIVER! WE FULL LOND STOP
Del. quantity	Rated speed rpm : 700
cm3/1000 strokes : 225.0	Aneroid pressure
CIID/ TOOU STY ORES . E25.0	hPa : -
Talananaa	Del. quantity
Tolerance	cm3/1000 strokes : 225.0
cm3/1000 strokes : + 1.0	
	Tolerance
Check tolerance	cm3/1000 strokes : +- 1.0
cm3/1000s. : $+-$ 4.0 -	Check tolerance
	cm3/1000s. : + 4.0
Spreed	Spreed
7	Tolerance
Tolerance	cm3/1000 strokes : 5.0
cm3/1000 strokes : 5.0 -	- Check tolerance
	- cm3/1000s. : 9.0
Check tolerance	-
cm3/1000s. : 9.0	}
1	CONTROL LEVER
4	
Rated speed rpm : 350	control lever
Nated Speed (pii) . 556	position degree : 77.0
Rack travel in mm: 5.60	tolerance degree : +- 4.0
Tolerance mm : +- 0.10	L totalike degree 4.0
Del. quantity	ACCEMBLY COVERNOR SETTING
cm3/1000 strokes : 17.0	ASSEMBLY GOVERNOR SETTING
Tolerance	750
cm3/1000 strokes : + 3.0	Rated speed rpm : 750
Check tolerance	rack travel mm : 13.80
cm3/1000s. : +- 6.0	
Spreed	Rated speed rpm : 785
Tolerance	Tolerance 1/min : + 4
cm3/1000 strokes : 8.0	- rack travel mm : 4.00
Check tolerance	
cm3/1000s. : 12.0	rack travel mm : 0.85
	Tolerance mm : +- 0.55
4	- Rated speed rpm : 850
(B) SETTING OF INJECTION PUMP	
WITH GOVERNOR	_
WZTIT GOVERNOON	- Rated speed rpm : 751
1	rack travel mm : 13.80
	- Tank et de de c'illin i 10100
GUIDE SLEEVE POSITION	- Rated speed rpm : 786
GOINE SEELAE LOSTITOIA	Tolerance 1/min : +- 4
	- rack travel mm : 4.00
aceteal layer	Tack travet (IHI) . 4.00
control lever	mak though mm . 0.05
position degree : - 3	rack travel mm : 0.85
Rated speed rpm : 800	Tolerance mm : + 0.55
1	- Rated speed rpm : 850
Rack travel in mm: 0.50	-
Tolerance mm : + 0.20	•
+	- Rated speed rpm : 752
governor spring	rack travel mm : 13.80
pre-tension +	-
click setting x : 1.50	- Rated speed rpm : 787
+	- Tolerance 1/min : +- 4
4	- rack travel mm : 4.00
'	- ज्यार पर व्यवस्थात । । । । । । । । । । । । । । । । । । ।

rack travel mm	: 0.85
Tolerance mm	: + 0.55
Rated speed rpm	: 850
Rated speed rpm rack travel mm	
Rated speed rpm	: 788
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm Tolerance mm Rated speed rpm	: <b>←</b> 0.55
Rated speed rpm	: 754
rack travel mm	: 13.80
Rated speed rpm	: 789
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
Rated speed rpm	: 755
rack travel mm	: 13.80
Rated speed rpm	: 790
Tolerance 1/min	: +- 4
rack travel mm	: 4.00
rack travel mm	: 0.85
Tolerance mm	: +- 0.55
Rated speed rpm	: 850
LOW IDLE	
control lever position degree tolerance degree	: 62.0 : +- 4.0
Testing:	
Rated speed rpm	: 350
rack travel mm	: 5.60
Tolerance mm	: + 0.10
rack travel mm	: 2.00
Rated speed rpm	: 380
Tolerance 1/min	: + 30
SET IDLE AUXILIAR	Y SPRING

700 14.85 +- 0.05 ERY 100 240.0
100
240 N
+- 10.0
+- 14.0
350
5.60 +- 0.10
- · · <del>-</del>
47.5
17.0
17.0 +- 3.0
<b>←</b> 3.0

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 01.05.98 : ISO 4113

Combination No. : 0 402 076 790

Injection pump

Pump designation : PES6P120A720RS3352

EP type number : 0 412 026 780

Governor

Governer design. : RSV400...1100P2A599

: -5

Governer no.

: 0 421 833 525

Cust. part No. : RE66242

Customer-spec. information Customer : DEERE : 6081TF001 Motor

Power KW

: 149.0

#### TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet

temp. °C

Tolerance °C

Overflow valve : 1 457 413 010

Inlet press. bar : 2.0

Test nozzle holde

assembly

: 1 688 901 101

Opening pressure

bar

208.5

Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

x inside diameter: 3.0 x length mm : 600

**REMARKS** 

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure bar: 17.0

Tolerance bar : +- 1.0

Prestroke mm : 3.60 Tolerance mm : + 0.05

Check

tolerance mm : + 0.10

Rack travel in mm : 10.50

Tolerance mm : ← 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 6.50 Tolerance : ← 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

Beginning of delivery differende

and maximum rack

travel 14.00

Difference ° CS : 2.50

BASIC SETTING

1	
Rack travel in mm: 11.55 Tolerance mm: + 0.05	- FULL LOAD DELIVERY AT FULL LOAD STOP
Del. quantity cm3/1000 strokes : 133.0	- Rated speed rpm : 1100 - Aneroid pressure - hPa : 900
Tolerance cm3/1000 strokes : + 1.0	Del. quantity cm3/1000 strokes : 133.0 Tolerance
Check tolerance cm3/1000s. : + 3.0	- cm3/1000 strokes : +- 1.0 - Check tolerance - cm3/1000s. : +- 3.0
Spreed	Spreed
Tolerance cm3/1000 strokes : 4.0	Tolerance cm3/1000 strokes : 4.0 Check tolerance cm3/1000s. : 6.5
Check tolerance cm3/1000s. : 6.5	
	CONTROL LEVER
Rated speed rpm : 400	control lever position degree : 97.0
Rack travel in mm: 5.70 + Tolerance mm: + 0.10 + Del. quantity	tolerance degree : +- 4.0  RATED SPEED
cm3/1000 strokes : 26.0 Tolerance cm3/1000 strokes : + 2.0	rack travel mm : 10.50 Rated speed rpm : 1160 Tolerance 1/min : + 5
Check tolerance	
cm3/1000s. : +- 4.5 Spreed Tolerance	rack travel mm : 4.00 Rated speed rpm : 1215 Tolerance 1/min : +- 5
cm3/1000 strokes : 6.0 + Check tolerance +	rack travel mm : 0.85
cm3/1000s. : 8.0 +	Tolerance min : +- 0.55 Rated speed rpm : 1350
(B) SETTING OF INJECTION PUMP WITH GOVERNOR	rack travel mm : 4.00 Rated speed rpm : 1225 Tolerance 1/min : +- 15
GUIDE SLEEVE POSITION	
‡	LOW IDLE
control lever position degree : - 3	
Rated speed rpm : 800 +	control lever position degree : 74.0
Rack travel in mm: 0.50 + Tolerance mm: + 0.20 +	tolerance degree : +- 4.0  Setting point w/out bumper spring
governor spring pre-tension click setting x : 4.50	Rated speed rpm : 400 rack travel mm : 5.20
The section of the se	Tolerance mm : +- 0.10

Testing:	: > 19.00 : 400	† † † †	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance	:	148.5
rack travel mm Tolerance mm	: +- 0.10	_ <del>I</del>	cm3/1000s.	: +-	4.0
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1100 : 11.55 : + 0.05	+++++++++++++++++++++++++++++++++++++++	Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes		- 500 78.0
Rated speed rpm rack travel mm Tolerance mm	: 11.90	- <del> </del>	Tolerance cm3/1000 strokes Check tolerance cm3/1000s.		2.0
ANEROID/ALTITUDE COMPENSATOR TEST		<del>}</del>	STARTING FUEL DEL	IVERY	<del></del>
SETTING Rated speed rpm	: 500	† † †	Rated speed rpm rack travel mm Tolerance mm	: : : +	100 21.00 0.50
Pressure hPa Rated speed rpm	: 900	<del> </del> 	Del. quantity cm3/1000 strokes Tolerance		105.0
Pressure hPa rack travel mm Tolerance mm	: − : 9.20 : ← 0.20	‡	cm3/1000 strokes Check tolerance cm3/1000s.		20.0
MEASUREMENT		+			
Rated speed rpm		+	LOW IDLE		<del></del>
Pressure hPa rack travel mm Tolerance mm	: 550 : 11.00 : +- 0.20	<del>†</del> <del>†</del>	Rated speed rpm	:	400
Pressure hPa rack travel mm	: 210 : 9.80	+ + +	Rack travel in mm Tolerance mm Del. quantity		
Tolerance mm	: <b>←</b> 0.05	<del>†</del> <del>†</del>	cm3/1000 strokes Tolerance		
Start interlock		- ‡	cm3/1000 strokes Check tolerance		
Rated speed rpm	: > 100	†	cm3/1000s. Spreed Tolerance	: +-	4.5
Check speed 1/min	: > 80	+	cm3/1000 strokes Check tolerance cm3/1000s.	:	6.0 8.0
FUEL DELIVERY CHA	RACTERISTICS	- ‡	CIII3/ (UUUS.	•	0.U

#### Note remarks

Refer to Service Info for test and adjustment instructions. See microcard(s) W400/...

Edition Test oil

: 01.05.98 : ISO 4113

Combination No. : 0 402 746 611

Injection pump

Pump designation : PES6P120A320RS7372 EP type number : 0 412 726 940

Governor

Governer design. : RQV250...1400PA1279K

Governer no. : 0 421 815 508

Cust. part No. : 3866783

Customer-spec. information Customer : CDC

: 6BTA Motor Power KW : 235.0

# TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet

temp. °C : 40
Tolerance °C : +- 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0 Tolerance bar : + 0.1

Test nozzle holde

assembly : 1 688 901 103

Opening pressure

: 208.5 bar Tolerance bar : + 1.5

Test lines : 1 680 750 015

Outside diameter : 6.0

REMARKS

(A) INJECTION PUMP SETTING VALUES

Set equal delivery quant.

per values \_\_\_\_

# BEGINNING OF DELIVERY

Test pressure bar : 17.0 Tolerance bar : +- 1.0

Prestroke mm : 4.00 Tolerance mm : + 0.05

Check

tolerance mm : +- 0.10

Rack travel in mm : 10.50 Tolerance mm : + 1.50

Firing order : 1-5-3-6-2-

Phasing : 0-60-120-180-240

: -300

Start of delivery blocking

°NW after s.o.d. : 11.00 Tolerance : +- 0.50

Check

tolerance °NW : +- 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 13.45 Tolerance mm : + 0.05

Del. quantity cm3/1000 strokes : 186.5

N22

	Rated speed rpm : 1860
Tolerance	- guide steeve
cm3/1000 strokes : + 1.0	travel mm : 13.50
*	Tolerance mm : +- 0.50
Check tolerance	
cm3/1000s. : $\leftarrow$ 4.0	- FULL LOAD DELIVERY AT FULL LOAD STOP
Spreed	L FOLL LOAD DELIVERY AT FOLL LOAD STOP
opi ccu	- Rated speed rpm : 1400
Tolerance	- Aneroid pressure
cm3/1000 strokes : 8.0 -	hPa : 1200
Charle As Laurence	Del. quantity
Check tolerance cm3/1000s. : 12.0	- cm3/1000 strokes : 186.5 - Tolerance
CHS/18003: . 12.0	- cm3/1000 strokes : +- 1.0
-	- Check tolerance
+	- cm3/1000s. : +- 4.0
Rated speed rpm : 300	- Spreed
7.00	- Tolerance - cm3/1000 strokes : 8.0
Rack travel in mm : 7.00	- Check tolerance
Del. quantity	- cm3/1000s. : 12.0
cm3/1000 strokes : 28.0	-
Tolerance	
cm3/1000 strokes : +- 3.0	
Check tolerance	CONTROL LEVER
cm3/1000s. : + 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0 - 5.0	- - control lever
Tolerance	- position degree : 121.5
cm3/1000 strokes : 5.0	- tolerance degree : +- 4.0
Check tolerance	•
cm3/1000s. : 8.0	- RATED SPEED
†	- rack travel mm : 12.80 - Rated speed rpm : 1465
(B) SETTING OF INJECTION PUMP	- Rated speed rpm : 1465 - Tolerance 1/min : +- 5
WITH GOVERNOR	-
+	- rack travel mm : 6.80
	- Rated speed rpm : 1580
GUIDE SLEEVE TRAVEL	Tolerance 1/min : +- 15
Rated speed rpm : 1455	rack travel mm : 0.50
guide sleeve	- Tolerance mm : +- 0.50
travel mm : 9.16	- Rated speed rpm : 1725
Tolerance mm : + 0.15	•
Dated and any and are	•
Rated speed rpm : 275 + guide sleeve +	
travel mm : 1.39	- LOW IDLE
Tolerance mm : + 0.20	-
Rated speed rpm : 931	control lever
guide sleeve	position degree : 77.0
travel mm : 5.67 + Tolerance mm : + 0.25 +	tolerance degree : +- 4.0
Total and min U.E.	Control lever difference
Rated speed rpm : 480	Grad : 48.5
guide sleeve	tolerance degree : +- 6.0
travel mm : 3.18 +	
Tolerance mm : + 0.25	Setting point w/out bumper spring
†	

Rated speed rpm	: 200
CRT mm min.	: > 8.60
Testing:	
Rated speed rpm rack travel mm Tolerance mm	: 300 : 7.00 : ← 0.20
Rated speed rpm	: 350
TORQUE CONTROL Rated speed rpm rack travel mm Tolerance mm	: 1400 : 13.45 : + 0.05
Rated speed rpm rack travel mm Tolerance mm	: 1000 : 13.20 : +- 0.10
Rated speed rpm rack travel mm Tolerance mm	: 700 : 13.00 : + 0.20
ANEROID/ALTITUDE COMPENSATOR TEST	
SETTING	
Rated speed rpm Pressure hPa	: 1400 : 1200
Rated speed rpm Pressure hPa rack travel mm Tolerance mm	: -
MEASUREMENT	
Rated speed rpm	: 1400
Pressure hPa rack travel mm Tolerance mm	: 620 : 12.30 : ← 0.20
Pressure hPa rack travel mm Tolerance mm	: 280 : 10.65 : + 0.20
Start interlock	
Rated speed rpm Rated speed rpm	: > 100 : < 240

Check speed 1/min Check	: > 80
speed 1/min	: < 250
FUEL DELIVERY CHA	ARACTERISTICS
Aneroid pressure hPa Rated speed rpm Del. quantity	: 1200 : 1000
cm3/1000 strokes Tolerance	: 178.0
cm3/1000 strokes Check tolerance	: <b>←</b> 3.0
cm3/1000s. Spreed	: ← 6.0
Tolerance cm3/1000 strokes	: 8.0
Check tolerance cm3/1000S.	: 12.0
rack travel mm Tolerance mm	: 13.00 : + 0.20
Aneroid pressure hPa Rated speed rpm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	: - : 1000 : 98.5 : + 1.0 : + 3.0
STARTING FUEL DEL	IVERY
Rated speed rpm rack travel mm Tolerance mm Del. quantity cm3/1000 strokes Tolerance cm3/1000 strokes Check tolerance cm3/1000S.	
LOW IDLE	<del></del>
Rated speed rpm	: 300

Rack travel in mm Tolerance mm	:	+-	7.00 0.20
Del. quantity cm3/1000 strokes Tolerance	:		28.0
cm3/1000 strokes Check tolerance	:	+-	3.0
cm3/1000s. Spreed	:	+-	5.0
Tolerance cm3/1000 strokes Check tolerance cm3/1000s.	:		5.0
	:		8.0